Roland®

V-Card for V-Synth XT

VC-2 Vocal Designer

Owner's Manual

The V-Synth XT comes with the VC-1 and VC-2 titles from Roland's "V-Card" software series preinstalled. Without having to cycle power to the unit, you can simply press a single switch to transform the V-Synth XT into a completely different product.

VC-2 "Vocal Designer" transforms the V-Synth XT into a cutting-edge vocal modeling processor. By playing a keyboard while you speak into the mic, you can create beautiful and clearly intelligible human choruses as well as many other vocal-type sounds with unprecedented quality.

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V-Card for V-Synth XT

VC-2
Vocal Designer

Table of Contents

Main Features

VC-2 “Vocal Designer” transforms the V-Synth XT into a cutting-edge vocal modeling processor. By playing a keyboard while you speak into the mic, you can create beautiful and clearly intelligible human choruses as well as many other vocal-type sounds with unprecedented quality.

- Human Vocal Modeling lets you produce extremely high-quality and musical sounds by connecting a mic and inputting your voice while you play the keyboard (or receive note messages).
- Lyrics you input via the mic will be clearly intelligible. You can create beautiful choirs and pop music backup choruses that reflect the dynamics and nuances of your voice and breathing. In addition to vintage-type vocoder sounds, you can create new vocoder sounds that allow the lyrics to be intelligible.
- High-quality preset patches are provided for each algorithm.
- You can use the Auto Note function to extract pitch data from the mic input so that the VC-2 will generate sound without you having to play the keyboard (or receive note messages).
- You can play choir/chorus sounds just from note data without having to provide mic input.
- Multi Chord Memory function lets you generate a full chorus with one finger simply by choosing a preset chord set.
- Use mic pre-effects such as equalizer, noise suppressor, and compressor, as well as three effects (reverb, chorus, multi-effect).

Conventions Used in This Manual

Operating buttons are enclosed by square brackets [ ]; e.g., [EXIT].
Reference pages are indicated by (p. **).

The following symbols are used.

This indicates an important note; be sure to read it.

This indicates a memo regarding the setting or function; read it as desired.

This indicates a useful hint for operation; read it as necessary.

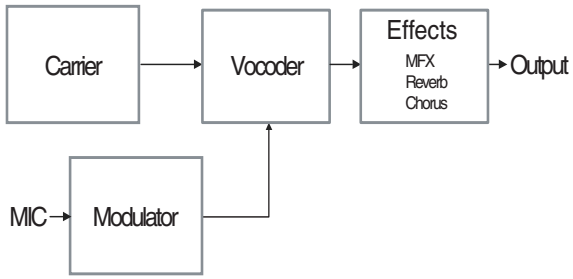

This indicates information for your reference; read it as necessary.

About the VC-2

Internal Structure

The VC-2 consists of a carrier section, a modulator section, a vocoder section, and an effects section.

- The carrier section generates the signal (timbre and pitch) that is the basis of the sound.
- The modulator section uses a mic input or wave to generate a signal from which the formant data (vocal character) is extracted.
- The vocoder section extracts the formant data (vocal character) from the signal generated by the modulator, and applies the formants to the signal that is generated by the carrier.
- The effects section provides multi-effects, chorus, and reverb.



Patch Algorithms

The VC-2 provides the following twelve patch algorithms. Each of these algorithms optimizes the values of certain parameters to make it easy for you to create a desired sound.

Modeling group

Modeling Choir

This produces an extremely clear choir (multiple vocal) sound.

Modeling Vocal

This produces an extremely clear solo vocal sound.

Modeling Analog

This produces an extremely clear sound based on a synth wave.

Vocoder group

Vocoder Choir

This produces a conventional vocoder sound using a choir (multiple vocal).

Vocoder Solo

This produces a conventional vocoder sound using a solo vocal.

Vocoder Vintage

This produces a traditional vocoder sound based on a synth wave.

Poly Pitch Shifter

Poly PShift

The vocal signal you input via the mic will be heard at the pitch you specify from the keyboard.

Keyboard group

Keyboard Choir

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This creates the sound of a choir (multiple vocal).

Keyboard Vocal

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This creates the sound of a solo vocal.

Keyboard Analog

Instead of the mic input, samples will be used to generate the sound. You can add these samples. This produces a sound based on a synth wave.

Processor group

Processor Type 1

External input (the rear panel INPUT L) is used in addition to the mic input. This produces an extremely clear sound.

* *Any keyboard playing will be ignored.*

Processor Type 2

External input (the rear panel INPUT L) is used in addition to the mic input. This produces a traditional vocoder sound.

* *Any keyboard playing will be ignored.*

Memory Structure

Project

The largest unit of memory used by the VC-2 is the **project**. A project contains up to 448 patches, up to 127 waves, and various system settings.

The VC-2 uses one project at a time.

Work Area/Temporary Area

When the VC-2 starts up, the project data is placed in temporary memory called the **work area**.

The currently playable patch data is then further placed (from the work area) into a location called the **temporary area**. This means that even after editing a patch, you can return to the unedited condition by once again recalling that patch.

Since patch data that you edit will disappear if you simply turn off the power, you must **save** (**PATCH Write**) it if you want to keep your changes.

You must save the project (**DISK Save Project**) after you operate wave data in the **Wave** screen or the **Wave Import** screen.

Internal Memory / PC Card

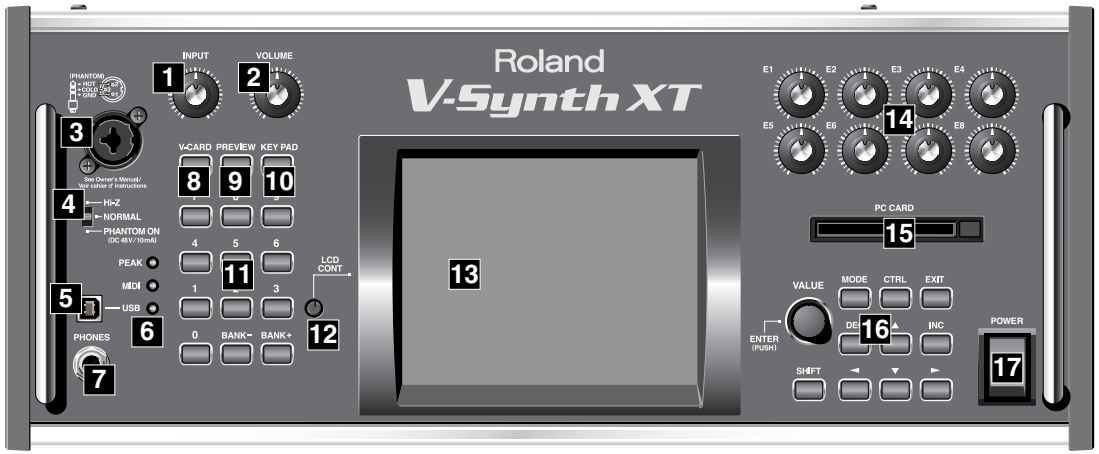
Normally, wave and patch data is written to, and read from the internal memory / PC Card.

USB

If you connect the V-Synth XT to your computer via a USB cable, projects data on an internal memory / PC Card can be saved (backed up) to the hard disk or other media on your computer.

Panel Descriptions

Front Panel



1 INPUT

Adjusts the volume of the signal input through the MIC jacks on the front panel.

* *This does not affect the rear panel INPUT jacks.*

2 VOLUME

Adjusts the overall volume that is output from the MAIN OUT jacks and PHONES jack.

3 MIC Jack

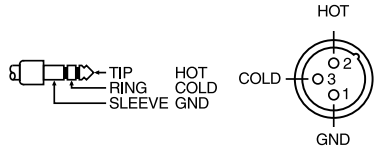
This is a mic jack for analog audio signal input.

It accommodates either XLR type or phone type plugs.

XLR type connections can provide 48V phantom power, allowing you to connect condenser mics that require phantom power. In this case, turn the mic switch to "PHANTOM ON."

* *The audio signal received via the MIC jack is switched on/off by the* ***MIC Jack Switch*** *(p. 38).*

* *This instrument is equipped with balanced (XLR/TRS) type jacks. Wiring diagrams for these jacks are shown below. Make connections after first checking the wiring diagrams of other equipment you intend to connect.*



4 MIC Switch

This setting specifies the impedance and phantom power supply for the mic jack.

Hi-Z	Choose the high impedance (Hi-Z) setting if you've connected a high-impedance device such as a guitar or bass to the phone-type input jack.
NORMAL	Choose the NORMAL setting if you've connected a low impedance device such as a mic to the phone-type input jack.
PHANTOM ON	Choose this setting if you need to supply phantom power to a mic connected to the XLR-type input jack.

* *The MIC switch does not affect the rear panel INPUT jacks.*
* *Always turn the phantom power off when connecting any device other than condenser microphones that require phantom power. You risk causing damage if you mistakenly supply phantom power to dynamic microphones, audio playback devices, or other devices that don't require such power. Be sure to check the specifications of any microphone you intend to use by referring to the manual that came with it.*
  (This instrument's phantom power: 48 V DC, 10 mA Max)

5 USB Connector

This is a USB connector. You can connect it to your personal computer to send or receive files and MIDI messages.Audio streaming is also supported.

6

[PEAK] (Peak Indicator)

This will light when the input volume is too high.

* *This responds to either the front panel MIC jack or the rear panel INPUT jacks.*

[MIDI] (MIDI indicator)

This will light when a MIDI message is received.

[USB] (USB indicator)

This will light when the V-Synth XT is connected via USB.

7 PHONES Jack

This is the jack for connecting headphones (sold separately).

8 V-CARD Button

The Roland "V-Card" series software VC-1 and VC-2 are preinstalled in the V-Synth XT. You can switch between V-Synth/VC-1/VC-2 functionality simply by pressing the V-Card button (p. 15).

9 PREVIEW Button

On the VC-2, this is used to turn the "Talk Switch function" on/off.

When the "Talk Switch function" is on, the PREVIEW button will blink, the audio output of the VC-2 (V-Synth XT) will stop, and the audio input from the mic will be passed through from MAIN OUT without change.

This is useful when you're on stage and want to use the mic connected to the VC-2 (V-Synth XT) to talk or make announcements between songs.

* *The Preview function is not used with the VC-2.*

10 KEY PAD Button

* *The KEY PAD button is not used with the VC-2.*

11 Numeric Key

Here you can register and recall your favorite patches.

[1]–[8]

- Use these buttons to select your favorite patches.
- By holding down the [0] button and pressing [1]–[8], you can register the currently selected patch (including the mic settings) as a favorite patch.

[BANK-], [BANK+]

- By holding down the [0] button and pressing [BANK-] or [BANK+], you can switch between banks of the patch palette.

[0]

- The Patch Palette screen is displayed while you hold down the [0] button.

* *The [9] button is not used with the VC-2.*

12 LCD CONT (LCD CONTRAST) Knob

Adjusts the display contrast.

13 Display

This displays information regarding the operation you are performing.

14 E1–E8 knobs

These knobs control **The Top Screen of Patch Mode** (p. 16) parameters in real time.

15 PC CARD Slot

A memory card can be inserted here.

16

VALUE Dial

This is used to modify values. If you hold down [SHIFT] as you turn the VALUE dial, the value will change in greater increments.

[MODE]

Opens the Mode Menu window.

[CTRL]

* *The CTRL button is not used with the VC-2.*

[EXIT]

Return to the Top screen, or close the currently open window. In some screens, this causes the currently executing function to be aborted.

[DEC], [INC]

This is used to modify values. If you keep on holding down one button while pressing the other, the value change accelerates. If you press one of these buttons while holding down [SHIFT], the value will change in bigger increments.

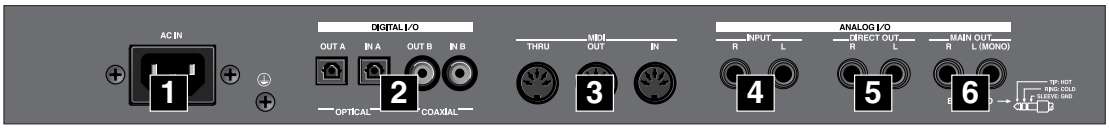
[▲], [▼], [◄], [►] (Cursor Buttons)

Moves the cursor location up/down/left/right.

17 POWER Switch

Press to turn the power on/off.

Rear Panel



1 AC Inlet

Connect the included power cord to this inlet.

2 DIGITAL AUDIO INTERFACE Connector (OPTICAL IN/OUT, COAXIAL IN/OUT)

(conforming to IEC60958).

These connectors output a digital audio signal (stereo). The output signal is identical to the signal that is output from the MAIN OUT jacks.

* *The digital input connectors are not used with the VC-2.*

3 MIDI Connectors (IN, OUT, THRU)

These connectors can be connected to other MIDI devices to receive and transmit MIDI messages.

4 INPUT Jacks (L, R)

An external audio source can be connected to these jacks for external input.

If you're playing a patch whose patch algorithm (p. 8) is Processor Type 1 or Processor Type 2, connect an external audio source (e.g., keyboard or CD player) to the V-Synth XT's "INPUT L" jack, and input an audio signal.

NOTE

The "INPUT R" jack is not used with the VC-2.

* *Connect your mic to the front panel MIC jack.*

* *The audio signal received via the INPUT jacks can be switched on/off by the* ***INPUT Jack Switch*** *(p. 38).*

* *The gain of the audio signal received via the INPUT jacks is adjusted by the* ***INPUT Jack Gain*** *(p. 38).*

5 DIRECT OUT Jacks (L, R)

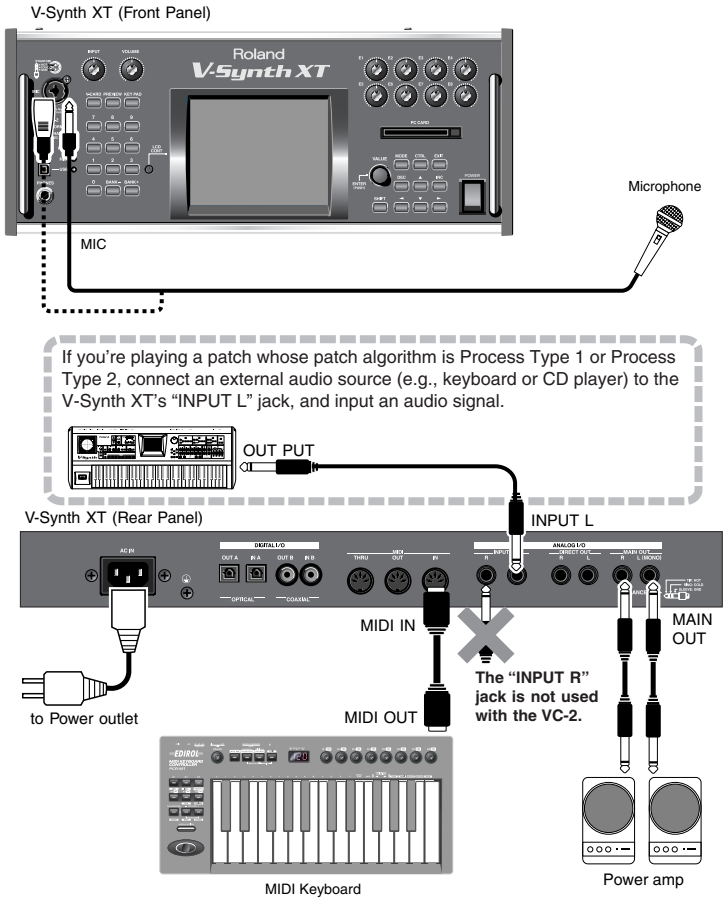
These jacks output the audio signal from the MIC jack before it has passed through the pre-effect (p. 25). The L and R jacks will output the same signal.

6 MAIN OUT Jacks (L (MONO), R)

These jacks output the audio signal to the connected mixer/amplifier system in stereo. For mono output, use the L jack.

Making connections

In order to use the VC-2, you'll need to connect a mic and MIDI keyboard to the V-Synth XT as shown in the illustration below.



Connect your mic to the front panel MIC jack.

Before you connect your mic, set the mic switch to the appropriate position for the type of mic you're connecting.

- If your mic requires phantom power to be supplied via the XLR jack, use the "PHANTOM ON" setting.
- If your mic uses a phone plug or does not require phantom power, set the **MIC Switch** (p. 10) to the "NORMAL" setting.

* *If you connect a mic, don't select the "Hi-Z" setting of the MIC switch.*

* *The audio signal that is input from the MIC jack can be turned on/off by the **MIC Jack Switch** (p. 38). Be sure that this is turned on when you're using the mic.*

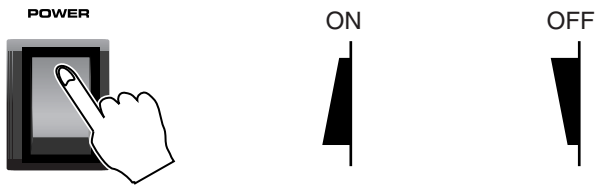
Starting up VC-2

1. Before turning on the V-Synth XT's power, consider these two questions:

* *Are all peripheral devices connected correctly?*

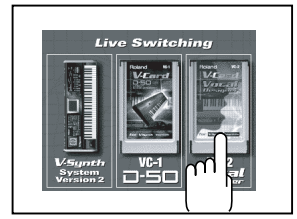
* *Have the volume controls of the V-Synth XT and all connected audio devices been turned to their lowest settings?*

2. Turn on the POWER switch located on the front panel of the V-Synth XT.



* *When you turn on the power, the V-Card that was most recently started will start up.*

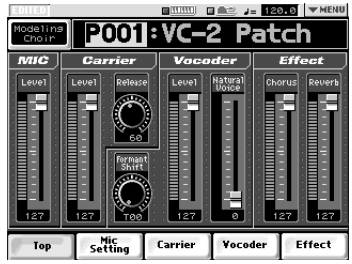
3. After the V-Synth XT has started up, press the [V-CARD] button and touch "Vocal Designer" (VC-2) in the screen that appears.



4. The VC-2 startup screen will appear.

* *By holding down the [V-CARD] button while you turn on the power, you can take a shortcut to the above screen when the V-Synth XT starts up.*

When the VC-2 starts up, the top screen of Patch mode will appear first.



* *Please be aware that in the screen shots printed in this manual, the patch names may differ from the factory settings.*

Try Out the Sound (Patch mode)

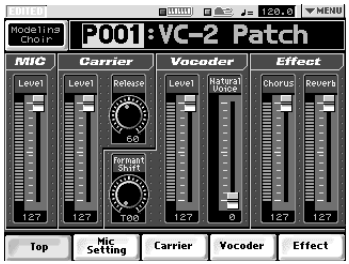
The Top Screen of Patch Mode

1. **Press [MODE].**

   The VC-2 MODE MENU window appears.

2. **Touch <PATCH>.**

   The top screen appears.



* *Please be aware that in the screen shots printed in this manual, the patch names may differ from the factory settings.*

MEMO

When the VC-2 starts up, the top screen of Patch mode will appear first.

MEMO

The screen will depend on the patch algorithm (p. 8) group.

HINT

From the other screens of Patch mode, you can move to the top screen by touching **<Top>** at the bottom of the screen.

Selecting a Patch

Selecting Patches with the VALUE dial

1. **Access the top screen of Patch mode.**
2. **Touch the patch number indication to highlight it.**
3. **Turn the VALUE dial or press [INC], [DEC].**

HINT

You can switch more rapidly by holding down [SHIFT] while you perform these operations.

Selecting Patches from the List

You can easily find the desired patch by selecting it from the patch list.

1. **Access the top screen of Patch mode.**
2. **Touch the patch algorithm indication located in the upper left of the screen. Alternatively, touch <▼MENU> in the upper right of the screen and then touch <PATCH List> in the pulldown menu.**

   The PATCH List window appears.

3. **Select a patch from the list.**

   Either turn the **VALUE dial** or use **[INC]**, **[DEC]** to select a patch. You can also select a patch by touching it on the display.

   The on-screen keys have the following functions.

   <P001–U192>: Change the buttons at both edges of the screen to P001–U192.

   <U193–U448>: Change the buttons at both edges of the screen to U193–U448.

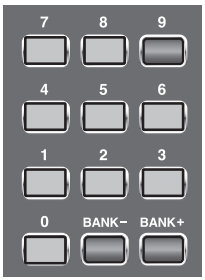
<Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm.

< << >: Return to the preceding screen page.

< >> >: Advance to the next screen page.

4. Touch <OK> to select the patch.

Using buttons to select patches



Any of the 64 patches in the current patch bank can be selected by entering the patch bank and number using numeric keys [1]–[8] on the front panel (Patch Palette).

1. Access the top screen of Patch mode.

2. Use NUMBER [1]–[8] to select a patch.

- You can hold down the [0] button and press [1]–[8] to register the currently selected patch (including the mic settings) as a favorite patch.
- You can hold down the [0] button and use the [BANK-][BANK+] buttons to switch between banks of the patch palette.

3. The Patch Palette screen is displayed while you hold down the [0] button.

Enabling or Disabling the Beep Tone

You can specify whether or not a beep tone will be heard when you touch a valid point on the touch screen. At the factory setting, the beep tone will be sounded.

1. In the upper right of the screen, touch <▼MENU>.

A pulldown menu appears.

2. In the pulldown menu, touch <Beep> to add a check mark (✔).

With this setting, the beep tone will be heard. If you perform the same procedure once again, the check mark will be cleared and the beep tone will no longer be heard.

Playing

1. Access the top screen of Patch mode. (p. 16)

2. Select a patch.

3. While you speak or sing into the mic, turn the front panel INPUT LEVEL knob to adjust the volume of the input from the front panel MIC jack.

Adjust the volume so that the PEAK indicator does not light.

HINT

If you want to make more detailed settings, touch <Mic Setting> at the bottom of the screen to access the SYSTEM MIC Setting screen (p. 24).

4. Speak or sing into the mic while you play the MIDI keyboard.

NOTE

If you're playing a patch whose patch algorithm (p. 8) is **Processor Type 1** or **Processor Type 2**, you won't hear the patch unless you input sound from an external device connected to the rear panel **INPUT L** in addition to the mic input.

MEMO

If you're playing a patch whose patch algorithm (p. 8) is **Keyboard~**, you don't need to speak or sing into the mic; the patch will produce sound when you simply play the keyboard.

Parameters in the Top Screen

Common to all patch algorithms

Parameter	Value	Explanation
Tempo	20.0–250.0	Adjusts the tempo of the patch
Chord Memory 	ON, OFF	Switches the Multi Chord Memory (one-finger chord) function on/off. * *if you want to synchronize to an external device, set **Clock Source** (p. 38) to EXTERNAL, then get your external device to transmit clock messages. If you fail to do this, chords will not play correctly.*
Chord Memory Hold 	ON, OFF	Switches the Chord Memory hold on/off.
Patch Algorithm	—	Opens the PATCH List window. (p. 16)
Patch Number	P001–P064, U001–U448	Changes the patch number. **P** indicates a **preset patch**, and **U** indicates a **user patch**.
Effect Chorus	0–127	Adjusts the output level of the chorus.
Effect Reverb	0–127	Adjusts the output level of the reverb.

If the patch algorithm is Modeling~

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Vocoder~

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Tone	0–127	Adjusts the tone (brightness) of the vocoder.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Poly PShift

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the poly pitch shifter.
Poly Pitch Shifter TVA Level	0–127	Adjusts the TVA level of the poly pitch shifter.
Poly Pitch Shifter Release	0–127	Adjusts the release time of the poly pitch shifter (the time from when you release a key until the sound disappears).
Poly Pitch Shifter Formant Style	S00–S10	Selects the formant style of the poly pitch shifter.
Poly Pitch Shifter Level	0–127	Adjusts the output level of the poly pitch shifter.
Poly Pitch Shifter Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Keyboard~

Parameter	Value	Explanation
Wave Level	0–127	Adjusts the output level of the wave to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Carrier Release	0–127	Adjusts the release time of the carrier (the time from when you release a key until the sound disappears).
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (unprocessed sound of the wave).

If the patch algorithm is Processor Type 1

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Vocoder Formant Type	T00–T15	Selects the type of vocoder formant.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

If the patch algorithm is Processor Type 2

Parameter	Value	Explanation
MIC Level	0–127	Adjusts the output level of the mic to the vocoder.
Carrier Level	0–127	Adjusts the output level of the carrier to the vocoder.
Vocoder Tone	0–127	Adjusts the tone (brightness) of the vocoder.
Vocoder Level	0–127	Adjusts the output level of the vocoder.
Vocoder Natural Voice	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).

Creating/Editing Patches (Patch mode)

Creating Patches

On the VC-2, you don't need to create patches from scratch, you can start with an existing patch; i.e., by selecting a patch algorithm.

1. **Decide on the algorithm (p. 8) for the patch you want to create.**
2. **Choose an existing patch that uses that algorithm.**
3. **Assign a new name to that patch, and save it at a different patch number (p. 22).**
4. **Edit the patch you copied.**

Basic Procedure for Patch Editing

1. **Press [MODE].**

   The VC-2 MODE MENU window appears.

2. **Touch <PATCH>.**

   The top screen appears.

MEMO

When the VC-2 starts up, the top screen of Patch mode will appear first.

3. **Select the patch you want to edit. (p. 16)**
4. **Touch one of the buttons at the bottom of the screen to select the edit group containing the parameters you want to set.**

   The parameters are organized into several editing groups.

5. **Touch one of the tabs in the left of the screen to select the desired editing screen.**
6. **In each editing screen, touch the touch screen to set the parameters.**
7. **When editing a parameter that requires you to specify a value, move the cursor to the value box of that parameter. Then modify the value by either turning the VALUE dial or pressing [INC] or [DEC]. You can also modify a value by dragging over the touch screen.**
8. **Repeat steps 4–7 to make the settings for the System function.**

Changing the Pitch (PATCH Tune)

NOTE

Patches whose patch algorithm is **Processor~** do not have this menu.

1. **Touch <▼MENU> in the upper right of the screen.**

   A pulldown menu appears.

2. **In the pulldown menu, touch <PATCH Tune>.**

   The PATCH Tune screen appears.

3. **Edit the parameter values.**

Parameter	Value	Explanation
Coarse (Patch Coarse Tune)	-48–+48	Adjusts the pitch of the patch's sound up or down in semitone steps (+/-4 octaves).
Fine (Patch Fine Tune)	-50–+50	Adjusts the pitch of the patch's sound up or down in 1-cent steps (+/-50 cents). * *One-cent is 1/100th of a semitone.*
Scale Tune (Scale Tune Switch)	OFF, ON	Turn this on when you wish to use a tuning scale other than equal temperament. The VC-2 allows you to play the keyboard using temperaments other than equal temperament. The pitch is specified in one-cent units relative to the equal tempered pitch.
C–B (Patch Scale Tune)	-100–+100	Make scale tune settings.

4. **Touch <Exit> to exit the screen.**

Equal Temperament

This tuning divides the octave into 12 equal parts, and is the most widely used method of temperament used in Western music. The VC-2 employs equal temperament when the Scale Tune Switch is set to "OFF."

Just Temperament (Tonic of C)

Compared with equal temperament, the principle triads sound pure in this tuning. However, this effect is achieved only in one key, and the triads will become ambiguous if you transpose.

Arabian Scale

In this scale, E and B are a quarter note lower and C#, F# and G# are a quarter-note higher compared to equal temperament. The intervals between G and B, C and E, F and G#, Bb and C#, and Eb and F# have a natural third- the interval between a major third and a minor third. On the VC-2, you can use Arabian temperament in the three keys of G, C and F.

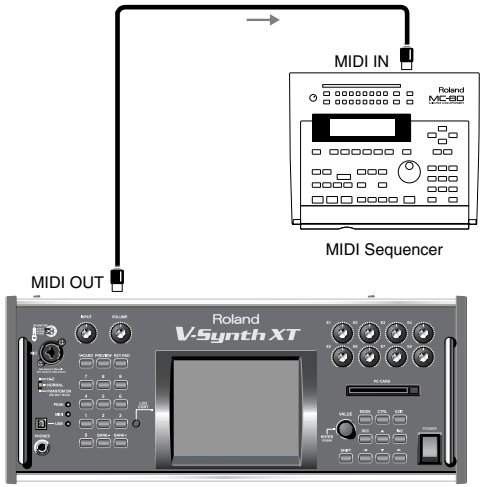
<Example>

Note name	Equal temperament	Just Temperament (tonic C)	Arabian Scale
C	0	0	-6
C#	0	-8	+45
D	0	+4	-2
Eb	0	+16	-12
E	0	-14	-51
F	0	-2	-8
F#	0	-10	+43
G	0	+2	-4
G#	0	+14	+47
A	0	-16	0
Bb	0	+14	-10
B	0	-12	-49

Transmitting Data to an External MIDI Device (Data Transfer)

Patch, setup and system settings will be transmitted to an external MIDI device. This operation is called bulk dump. Use this operation when you want to connect another VC-2 (V-Synth XT) and play it using the same settings, or to save your data on an external MIDI device as a precaution against possible loss of sound data or system settings.

To transmit data to an external MIDI device, connect the external MIDI device and V-Synth XT as shown in the diagram.



V-Synth XT

1. **Touch <▼MENU> in the upper right of the screen.**

   A pulldown menu appears.

2. **In the pulldown menu, touch <Data Transfer>.**

   The Data Transfer window appears.

3. **In "Source," select the type of data that you want to transmit.**

   <ALL>: Patch, setup, mic setting, system

   <SETUP+MIC Sets>: Setup and mic setting

   <SYSTEM>: System

   <PATCH>: Patch

   If you selected <PATCH>, specify the patch that is to be sent.

   <WORK>: Transmit user patches.

   Use the "FROM" - "TO" fields to specify the range of patch numbers (**U001-U448**) that will be transmit.

   <TEMP>: Transmit patch from the temporary area.

4. Set the external MIDI device so that it will be ready to receive data, and touch <Execute> to execute data transmission.

While the data is being transmitted, the display will indicate "Transmitting..." When "COMPLETED!" is displayed, the transmission has been completed.

HINT

To halt during transmission, touch <ABORT>.

Naming a Patch (PATCH Name)

Before you save the patch, here's how to give it a new name.

1. Make sure that the patch that you want to name is selected.

2. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

3. In the pulldown menu, touch <PATCH Name>.

The PATCH Name window appears.

4. Touch the on-screen alphabetic or numeric keys to enter the new name in the text box.

The on-screen keys have the following functions.

<←><→>: Move the cursor in the text box to the desired input location.

<SHIFT>: Turn this on when you want to input uppercase letters or symbols.

<Insert>: Turn this on when you want to insert a character at the cursor location.

<Clear>: Erases all characters in the text box.

<Delete>: Deletes the character at the cursor location.

<Back>: Deletes the character that precedes the cursor location.

HINT

You can also move the input location cursor by pressing the [◄][►] cursor buttons. Pressing [▲] will change the character at the cursor location to uppercase, and pressing [▼] will change it to lowercase.

5. When you have finished inputting, touch <OK> to finalize the patch name.

Saving Patches (PATCH Write)

Changes you make to sound settings are temporary, and will be lost if you turn off the power or select another sound. If you want to keep the modified sound, you must save it.

If you edit a patch, the message "EDITED" appears in the upper left of the screen. Once you save the patch, the "EDITED" indication goes away.

NOTE

When you perform the save procedure, the data that previously occupied the save destination will be lost.

1. Make sure that the patch you wish to save is selected.

2. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

3. In the pulldown menu, touch <PATCH Write>.

The PATCH Write window appears.

4. Turn the VALUE dial to specify the save-destination patch.

You can touch <ReName> and rename the save-source patch.

By touching <Compare> you can check the save-destination patch (Compare function).

5. Touch <Execute> to execute the Save operation.

Auditioning the Save-Destination Patch (Compare)

Before you save a patch, you can audition the patch which currently occupies the save destination to make sure that it is one you don't mind overwriting. This can help prevent important patches from being accidentally overwritten and lost.

1. Follow the procedure in "Saving Patches (PATCH Write)" through step 4 to select the save destination.

2. Touch <Compare> to turn it on.

Now you can play the patch that is in the currently selected save destination.

3. Play the save-destination patch to make sure that it's one you don't mind overwriting.

NOTE

The patch auditioned using the Compare function may sound slightly different than when it is played normally.

4. If you wish to change the save destination, re-specify the save-destination patch by using the VALUE dial.

5. Touch <Execute> to execute the Save operation.

Copying Patch Controller Settings (Patch Controller Copy)

1. Make sure that you've selected the patch with the controller settings you want to copy.

2. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

3. In the pulldown menu, touch <PATCH Ctrl>.

The Patch Controller Copy window appears.

4. Turn the VALUE dial to select the copy destination.

If you select the same user patch for both FROM and TO of the Destination, only that patch will be copied.

If you select different user patches for FROM and TO of the Destination, the patches in that range will be copied.

NOTE

The copy operation will not be carried out if the copy-destination patch is "INITPATCH."

MEMO

The controller settings shown in the Source field will be copied. This will depend on the patch algorithm. If the patches in the Source field and Destination field use different algorithms, only the settings they have in common will be copied.

5. Touch <Execute> to execute the Copy operation.

Deleting Patches (PATCH Delete)

1. Make sure that the patch you wish to delete is selected.

2. Touch <▼MENU> in the upper right of the screen.

A pulldown menu appears.

3. In the pulldown menu, touch <PATCH Delete>.

The PATCH Delete List window appears.

4. From the list, select the patch that you want to delete.

Either turn the **VALUE dial** or use **[INC][DEC]** to select a patch. You can also select a patch by touching it on the display.

The on-screen keys have the following functions.

<P001-U192>: Change the buttons at both edges of the screen to P001-U192.

<U193-U448>: Change the buttons at both edges of the screen to U193-U448.

<Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm.

< << >: Return to the preceding screen page.

< >> >: Advance to the next screen page.

5. Touch <Execute> to execute the Delete operation.

NOTE

You can't delete preset patches.

Selecting a Patch from a List (PATCH List)

HINT

You can also access the PATCH List window from the top screen of Patch mode by touching the patch algorithm in the upper left of the screen.

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <PATCH List>.**
   The PATCH List window appears.
3. **Select a patch from the list.**
   Either turn the **VALUE dial** or use **[INC][DEC]** to select a patch. You can also select a patch by touching it on the display.
   The on-screen keys have the following functions.
   <P001-U192>: Change the buttons at both edges of the screen to P001-U192.
   <U193-U448>: Change the buttons at both edges of the screen to U193-U448.
   <Algorithm>: Change the buttons at both edges of the screen to Patch Algorithm.
   < << >: Return to the preceding screen page.
   < >> >: Advance to the next screen page.
4. **Touch <OK> to select a patch.**

Top Screen

You can go to the top screen by touching **<Top>** in the lower part of the screen.

For details, refer to **Parameters in the Top Screen** (p. 18).

SYSTEM MIC Setting Screen

You can go to the top screen by touching **<Mic Setting>** in the lower part of the screen.

NOTE

Patches whose patch algorithm is **Keyboard~** do not have this screen.

Switching the Mic Setting

The VC-2 can store eight mic settings.
In the upper right of the screen, touch <▼MENU> to access the pulldown menu, and choose one of the eight templates.

NOTE

Note that when you change the parameter values, the mic settings will also change (and be saved automatically).

Naming a Mic Setting (Setting Name)

You can assign a new name to a mic setting.

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <Setting Name>.**
   The MIC Setting Name screen appears.
3. **Touch the on-screen alphabetic or numeric keys to enter the new name in the text box.**
   The on-screen keys have the following functions.
   <←><→>: Move the cursor in the text box to the desired input location.
   <SHIFT>: Turn this on when you want to input uppercase letters or symbols.
   <Insert>: Turn this on when you want to insert a character at the cursor location.
   <Clear>: Erases all characters in the text box.
   <Delete>: Deletes the character at the cursor location.
   <Back>: Deletes the character that precedes the cursor location.

HINT

You can also move the input location cursor by pressing the [◄][►] cursor buttons. Pressing [▲] will change the character at the cursor location to uppercase, and pressing [▼] will change it to lowercase.

4. When you have finished inputting, touch <OK> to finalize the mic setting name.

PRE-EFX Type (Pre-Effect Types)

There are three pre-effects: compressor, limiter, and noise suppressor. By using these you can adjust the level of the sound being sampled.

Noise suppressor: This effect leaves the original sound untouched, but mutes the noise that is heard during periods of silence.

Compressor: By reducing high levels and raising low levels, this effect smoothes out unevenness in volume.

Limiter: By compressing sounds that exceed a specified volume level, this effect prevents the sound from distorting.

OFF

No pre-effect will be used.

EQ LOW/MID/HIGH (Three-band equalizer)

Parameter		Value	Explanation
EQ LOW	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
	Gain	-15– +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.
EQ MID	Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
	Q	0.3, 0.4, 0.6, 0.8, 1.0, 1.5, 2.0, 2.5. 3.0, 3.5, 4.0, 5.0, 6.0, 7.0, 8.0, 10.0, 12.0, 14.0, 16.0, 18.0, 20.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
	Gain	-15– +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.
EQ HIGH	Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
	Gain	-15– +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.
MIC LEVEL		0–127	Adjusts the volume of the mic. * *This is linked with MIC Level in the top screen.*

NS-COMP

Compressor and noise suppressor settings can be made.

For the parameters of the three-band equalizer, refer to the explanation of **OFF**.

NOISE SUPRESSOR

Parameter	Value	Explanation
Thres (Threshold Level)	-60–0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
Release (Release Time)	0–127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.

COMPRESSOR

Parameter	Value	Explanation
Gain	0–127	Adjusts the output gain.
Attack (Attack Time)	0–127	Specifies the attack time of the input sound.
Release (Release Time)	0–127	Specifies the time from when the compressor begins to operate until the volume reaches 0.
Level (Output Level)	0–127	Adjusts the volume of the mic. * *This is linked with MIC Level in the top screen.*

NS-LIMIT

Limiter and noise suppressor settings can be made.

For the parameters of the three-band equalizer, refer to the explanation of **OFF**.

For the parameters of the noise supressor, refer to the explanation of **NS-COMP**.

LIMITER

Parameter	Value	Explanation
Thres (Threshold Level)	-40–0 dB	Specifies the level (threshold level) at which the limiter will begin to function.
Attack (Attack Time)	0–127	Specifies the time from when the input level exceeds the threshold level until the limiter begins to operate.
Release (Release Time)	0–127	Specifies the time from when the input level drops below the threshold level until the limiter turns off.
Ratio	2:1–INF:1	Specifies the compression ratio.
Level (Output Level)	0–127	Adjusts the volume of the mic. * *This is linked with MIC Level in the top screen.*

NOISE SUP

Noise suppressor settings can be made.

For the parameters of the three-band equalizer, refer to the explanation of **OFF**. (p. 25)

NOISE SUPRESSOR

Parameter	Value	Explanation
Thres (Threshold Level)	-60–0 dB	Specifies the level at which the noise suppressor will begin to operate. When the signal falls below the specified level, it will be muted.
Release (Release Time)	0–127	Specifies the time from when the noise suppressor begins to operate until the volume reaches 0.
Level (Output Level)	0–127	Adjusts the volume of the mic. * *This is linked with MIC Level in the top screen.*

Carrier Screen

You can go to the top screen by touching **<Carrier>** in the lower part of the screen.

NOTE

Patches whose patch algorithm is **Poly PShift** do not have this screen.

The carrier screen will be different if the patch algorithm is **Processor~**. Refer to "**Carrier Screen for Processor~ Patch Algorithms**" (p. 29).

OSC

OSC 1/OSC 2

The following parameters will be displayed if the oscillator type is **Analog**.

Parameter	Value	Explanation
Wave	—	Selects the wave. * *The available waves will depend on the patch algorithm.*
Level	0–127	Adjusts the output volume.
Pan	L64–0–63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
Pulse Width	-63–+63	Specifies the amount by which the wave shape will be modified.
SubOSC	OFF, -2, -1, 0	The same wave will be layered. OFF: No sound. -2: The second wave will sound two octaves below. -1: The second wave will sound one octave below. 0: The second wave will sound at the same pitch.
SubLvl	0–127	Specifies the output volume of the second wave.
Detune	-63–+63	Specifies the amount of detuning for the second wave.

The following parameters will be displayed if the oscillator type is **PCM**.

Parameter	Value	Explanation
Wave	—	Selects the wave. * *The available waves will depend on the patch algorithm.*
Level	0–127	Adjusts the output volume.
Pan	L64–0–63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
Offset	0–15	Adjusts the precise point at which the wave is to begin sounding.

PITCH

OSC1 PITCH

Parameter	Value	Explanation
OctShift (Octave Shift)	-4– +4	Adjusts the pitch of the OSC1's sound up or down in units of an octave (+/-4 octaves).

OSC2 PITCH

Parameter	Value	Explanation
Coarse (Coarse Tune)	-48– +48	Adjusts the pitch of the oscillator up or down in semitone steps (+/-4 octaves).
Fine (Fine Tune)	-50– +50	Adjusts the pitch of the oscillator up or down in 1-cent steps (+/-50 cents).
PitchKF (Pitch Key Follow)	-200– +200	This specifies the amount of pitch change that will occur when you play a key one octave higher (i.e., 12 keys upward on the keyboard). If you want the pitch to rise one octave as on a conventional keyboard, set this to "+100." If you want the pitch to rise two octaves, set this to "+200." Conversely, set this to a negative value if you want the pitch to fall. With a setting of "0," all keys will produce the same pitch.

GLIDE

Parameter	Value	Explanation
Time	0–127	Specifies the time over which the pitch is to change.
OSC1/2 Depth	-63– +63	Specifies the amount of pitch change that is to occur.

VIBRATO

Parameter	Value	Explanation
Type	NORMAL, FEMALE1, FEMALE2, MALE	Selects the type of vibrato.
Rate	0–127	Adjusts the vibrato speed.
OSC1/2 Depth	-63– +63	Adjusts the depth of the vibrato applied to OSC1 or OSC2.
OSC1/2 ModDepth	-63– +63	Adjusts the depth of the vibrato that is applied to OSC1 or OSC2 by the controller assigned by **Controller** (p. 31).

EQ GROWL

EQUALIZER

Mid 1/Mid 2

Parameter	Value	Explanation
Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the middle range.
Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Adjusts the width of the middle range. Set a higher value for Q to narrow the range to be affected.
Gain	-15– +15 dB	Adjusts the gain of the middle range. Positive (+) settings will emphasize the middle range.

GROWL

Parameter	Value	Explanation
GrowlSw	OFF, ON	Switches growl on/off.
Intensity	0–127	Adjusts the intensity of modulation.
ModDepth	-63– +63	Adjusts the intensity of modulation by the controller assigned by **Controller** (p. 31).
Speed	0–127	Adjusts the speed of modulation.
ModDepth	-63– +63	Adjusts the speed of modulation by the controller assigned by **Controller** (p. 31).

TVA

Level

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the patch.
LevelKF (Level Key Follow)	-200– +200	Use this parameter if you want the volume of the patch to change according to the key that is pressed. Relative to the volume at the C5 key (center C), positive (+) settings will cause the volume to rise for notes higher than C5, and negative (-) settings will cause the volume to fall for notes higher than C4. Larger settings will produce greater change.

Parameter	Value	Explanation
VeloSens	-63–+63	Keyboard playing dynamics can be used to control the volume of the patch. If you want the volume to have more effect for strongly played notes, set this parameter to a positive (+) value. If you want the volume to have less effect for strongly played notes, set this to a negative (-) value.
LevelMod-Depth	-63–+63	Adjusts the volume of the patch by the controller assigned by **Controller** (p. 31).

Pan

Parameter	Value	Explanation
Pan	L64–0–63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
PanKF (Pan Key Follow)	-200–+200	Use this parameter if you want key position to affect panning. Positive (+) settings will cause notes higher than C5 key (center C) to be panned increasingly further toward the right, and negative (-) settings will cause notes higher than C5 key (center C) to be panned toward the left. Larger settings will produce greater change.
PanMod-Depth	-63–+63	Adjusts the pan of the patch by the controller assigned by **Controller** (p. 31).

Attack

Parameter	Value	Explanation
Time	0–127	Specifies the attack time of the envelope (the time from when you press a key until the envelope level reaches the maximum value).
VeloSens	-63–+63	This allows keyboard dynamics to affect the attack time of the envelope. If you want attack time to be speeded up for strongly played notes, set this parameter to a positive (+) value. If you want it to be slowed down, set this to a negative (-) value.

Release

Parameter	Value	Explanation
Time	0–127	Specifies the release time of the envelope (the time from when you release a key until the envelope level reaches 0).

CTRL (controller)

KEY ASSIGN

Parameter	Value	Explanation
Mono/Poly	MONO, POLY	Specifies whether the patch will play monophonically or polyphonically. The monophonic setting is effective when playing a solo instrument patch such as sax or flute. **MONO**: Only the last-played note will sound. **POLY**: Two or more notes can be played simultaneously.
LegatoSw	OFF, ON	Legato is valid when the Mono/Poly parameter is set to monophonic. This setting specifies whether the Legato function will be used (ON) or not (OFF). With the Legato Switch parameter "ON," pressing a key while continuing to press a previous key causes the note to change pitch to the pitch of the most recently pressed key, sounding all the while. This creates a smooth transition between notes, which is effective when you wish to simulate the hammering-on and pulling-off techniques used by a guitarist.

PORTAMENTO

Portamento is an effect which smoothly changes the pitch from the first-played key to the next-played key. By applying portamento when the Mono/Poly parameter is monophonic, you can simulate slide performance techniques on a violin or similar instrument.

Parameter	Value	Explanation
PortaSw	OFF, ON	Specifies whether portamento will be applied (ON) or not (OFF).
Mode	NORMAL, LEGATO	Specifies the performance conditions for which portamento will be applied. **NORMAL**: Portamento will always be applied. **LEGATO**: Portamento will be applied only when you play legato (i.e., when you press the next key before releasing the previous key).
Type	RATE, TIME	Specifies the type of portamento effect. **RATE**: The time it takes will depend on the distance between the two pitches. **TIME**: The time it takes will be constant, regardless of how far apart in pitch the notes are.

Parameter	Value	Explanation
Time	0–127	When portamento is used, this specifies the time over which the pitch will change. Higher settings will cause the pitch change to the next note to take more time.

BENDER

Parameter	Value	Explanation
Range	0–48	Specifies the degree of pitch change in semitones when the Pitch Bend lever is all the way left/right. For example if this is set to "48" and you move the pitch bend lever all the way to the left, the pitch will fall 4 octaves. If this parameter is set to "12," the pitch will rise one octave when the pitch bend lever is moved to the rightmost position.

Carrier Screen for Processor~ Patch Algorithms

TVA

Level

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the patch.
ModDepth	-63–+63	Adjusts the volume of the patch by the controller assigned by **Controller** (p. 31).

Pan

Parameter	Value	Explanation
Pan	L64–0–63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.
ModDepth	-63–+63	Adjusts the pan of the patch by the controller assigned by **Controller** (p. 31).

Wave Screen

In the case of a patch whose patch algorithm is **Keyboard~**, you can access the Wave screen by touching **<Wave>** in the lower part of the screen.

OSC

WAVE

Parameter	Value	Explanation
Wave	—	Selects a preset or imported wave.
Tempo Sync	OFF, ON	Specifies whether the wave will be sounded in sync with the tempo clock (ON) or not (OFF).
Key Mode	NORMAL, ALWAYS	**NORMAL**: Begin sounding when you press a key, and stop sounding when you release the key. **ALWAYS**: Begin sounding when you first press a key, and continue sounding.

VARI

Parameter	Value	Explanation
Pitch	-63–+63	Adjusts the pitch.
ModDepth	-63–+63	Adjust the pitch using the controller assigned by **Controller** (p. 31).
Time	-63–+63	This sets the range of change in playback speed (time).
ModDepth	-63–+63	Adjust the range of change in playback speed using the controller assigned by **Controller** (p. 31).
Formant	-63–+63	This sets the range of change in vocal quality (formant).
ModDepth	-63–+63	Adjust the range of change in vocal quality using the controller assigned by **Controller** (p. 31).

TVA

Parameter	Value	Explanation
Level	0–127	Specifies the volume of the wave.
ModDepth	-63–+63	Adjust the volume of the wave using the controller assigned by **Controller** (p. 31).

Vocoder Screen

You can go to the top screen by touching **<Vocoder>** in the lower part of the screen.

NOTE

Patches whose patch algorithm is **Poly PShift** do not have this screen.

VOCODER

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the vocoder.
Atk	0–100	Adjusts the attack time of the vocoder. * *This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.*
Rel	0–100	Specifies the time from when the vocoder begins to operate until the volume reaches 0. * *This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.*
LevelMod-Depth	-63–+63	Adjust the output level of the vocoder using the controller assigned by **Controller** (p. 31).

NATURAL VOICE

Parameter	Value	Explanation
Level	0–127	Specifies the output level of the natural voice (your unprocessed voice, or the original sound of the wave for **Keyboard~** patch algorithms).
RevSend	0–127	Adjusts the reverb send level.
LevelMod-Depth	-63–+63	Adjust the output level of the natural voice using the controller assigned by **Controller** (p. 31).

UNVOICE

* *This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.*

Parameter	Value	Explanation
Level	0–127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1–50	Adjusts the sensitivity at which unvoiced consonants are detected.

Formant

* *This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.*

Parameter	Value	Explanation
Type	00: FLAT–15: STFEM2	Selects the type of formant.

TONE

* *This parameter is not available if the patch algorithm is **Vocoder~** or **Processor Type 2**.*

Parameter	Value	Explanation
Tone	0–127	Adjusts the brightness of the sound.

Hold Dump

Parameter	Value	Explanation
Time	0–127	Specifies the time from when the hold pedal is pressed to fix the tonal character from INPUT until that sound disappears.

AutoNoteSw

* *This parameter is not available if the patch algorithm is **Keyboard~** or **Processor~**.*

If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

Poly Pitch Shifter Screen

In the case of a patch whose patch algorithm is **Poly PShift**, you can access the Wave screen by touching **<Poly Pitch Shifter>** in the lower part of the screen.

OSC

OSC 1/OSC 2

Parameter	Value	Explanation
Formant Style	00: FLAT–10: IMPROV	Selects the style of vocal character (formant).
Formant	-63– +63	Adjusts the width of formant change.
Level	0–127	Adjusts the output volume.
Pan	L64–0–63R	Specifies the pan of the patch. "L64" is far left, "0" is center, and "63R" is far right.

Parameter	Value	Explanation
FmtKF	-200– +200	Specifies the amount by which the formant value will be affected by the key you play.
OSC 2 switch	OFF, ON	Switches OSC2 on/off.

POLY PITCH SHIFTER

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the poly pitch shifter.
ModDepth	-63– +63	Adjust the output level of the poly pitch shifter using the controller assigned by **Controller** (p. 31).

NATURAL VOICE

Parameter	Value	Explanation
Level	0–127	Adjusts the output level of the natural voice (your own unprocessed voice).
RevSend	0–127	Adjusts the reverb send level.
ModDepth	-63– +63	Adjust the output level of the natural voice using the controller assigned by **Controller** (p. 31).

UNVOICE

Parameter	Value	Explanation
Level	0–127	Specifies the amount of the detected unvoiced consonants that will be mixed into the output of the vocoder.
Detect	1–50	Adjusts the sensitivity at which unvoiced consonants are detected.

PITCH / EQ GROWL / TVA / CTRL

Refer to **PITCH** (p. 27), **EQ GROWL** (p. 27), **TVA** (p. 27), and **CTRL** (p. 28) in the "Carrier Screen."

AutoNoteSw

If this is on, the pitch from the mic input will be detected, allowing you to play the VC-2 without having to play the keyboard (i.e., without inputting note data).

Controller

Select the controller used by **ModDepth** or **~ModDepth**.

NOTE

Parameters marked by ***** will not function since the V-Synth XT (rack-mount) does not have the corresponding controller. They will function if you connect the V-Synth (keyboard) to the V-Synth XT as an external MIDI controller.

OFF: Control will not be used.

CC01–31, 33–95: Controller numbers 1–31, 33–95

BEND: Pitch Bend, **AFT**: Aftertouch

+PAD-X*: The center of the time trip pad is 0; toward the right is +, and toward the left is -

+PAD-Y*: The center of the time trip pad is 0; upward is +, and downward is -

PAD-X*: The left edge of the time trip pad is 0; toward the right is +

PAD-Y*: The bottom edge of the time trip pad is 0; upward is +

TRIP-R*: The outer edge of the time trip pad is 0; toward the center is +

BEAM-L*: D Beam controller (left)

BEAM-R*: D Beam controller (right)

KNOB1*: C1 knob

KNOB2*: C2 knob

VELO: Velocity

KEYF: Key Follow

* ***VELO*** *and* ***KEYF*** *do not exist in the wave screen Controller or for patches whose patch algorithm is* ***Processor~****.*

BREATH: Volume of the mic input → **Breath** (p. 39)

Effect Screen

You can go to the top screen by touching **<Effect>** in the lower part of the screen.

Routing

MFX (MFX On/Off Switch)

Switches MFX on and off.

Value:  (OFF),  (ON)

MFX Type

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to "**MFX Parameters**" (p. 43).

Value: 00 (Thru)–41

MFX Master Level

Adjusts the volume of the sound that has passed through the MFX.

Value: 0–127

MFX To CHO (MFX Chorus Send Level)

Adjusts the amount of chorus for the sound that passes through MFX. If you don't want to add the Chorus effect, set it to "0."

Value: 0–127

MFX To REV (MFX Reverb Send Level)

Adjusts the amount of reverb for the sound that passes through MFX. If you don't want to add the Reverb effect, set it to "0."

Value: 0–127

CHO (Chorus On/Off Switch)

Switches chorus on and off.

Value:  (OFF),  (ON)

CHO Type (Chorus Type)

Use this parameter to select from among the 8 available chorus. For details on chorus parameters, refer to "**Chorus Parameters**" (p. 61).

Value: 00 (Off)–08

CHO Master Level (Chorus Master Level)

Adjusts the volume of the sound that has passed through chorus.

Value: 0–127

CHO To REV (Chorus Reverb Send Level)

Adjusts the amount of reverb for the sound that passes through chorus. If you don't want to add the Reverb effect, set it to "0."

Value: 0–127

REV (Reverb On/Off Switch)

Switches reverb on and off.

Value:  (OFF),  (ON)

REV Type (Reverb Type)

Use this parameter to select from among the 14 available reverb. For details on reverb parameters, refer to "**Reverb Parameters**" (p. 62).

Value: 00 (Off)–14

REV Master Level (Reverb Master Level)

Adjusts the volume of the sound that has passed through reverb.

Value: 0–127

MFX

MFX Type

Use this parameter to select from among the 41 available MFX. For details on MFX parameters, refer to "**MFX Parameters**" (p. 43).

Value: 00 (Thru)–41

In this setting screen, you can edit the parameters of the MFX that is selected by the MFX Type setting. For details on the parameters that can be edited, refer to "**MFX Parameters**" (p. 43).

When you touch <List>, the MFX List window will appear, allowing you to select the MFX from the list.

MFX (MFX On/Off Switch)

Switches MFX on and off.

Value:  (OFF),  (ON)

CHO

CHO Type (Chorus Type)

Use this parameter to select from among the 8 available chorus. For details on chorus parameters, refer to "**Chorus Parameters**" (p. 61).

Value: 00 (Off)–08

In this setting screen, you can edit the parameters of the chorus that is selected by the CHO Type setting. For details on the parameters that can be edited, refer to "**Chorus Parameters**" (p. 61).

When you touch <List>, the Chorus List window will appear, allowing you to select the chorus from the list.

CHO (Chorus On/Off Switch)

Switches chorus on and off.

Value:  (OFF),  (ON)

REV

REV Type (Reverb Type)

Use this parameter to select from among the 14 available reverb. For details on reverb parameters, refer to "**Reverb Parameters**" (p. 62).

Value: 00 (Off)–14

In this setting screen, you can edit the parameters of the reverb that is selected by the REV Type setting. For details on the parameters that can be edited, refer to "**Reverb Parameters**" (p. 62).

When you touch <List>, the Reverb List window will appear, allowing you to select the reverb from the list.

REV (Reverb On/Off Switch)

Switches reverb on and off.

Value:  (OFF),  (ON)

Using Waves (Wave Mode)

NOTE

Never turn off the power of the V-Synth XT while performing an operation in Wave mode. Doing so may destroy the files.

1. **Press [MODE].**

   The VC-2 MODE MENU window appears.

2. **Touch <WAVE>.**

   The Wave screen appears.

NOTE

You must save after performing operations in this screen. When you touch **<Save>** in the screen, the **Disk Save Project** screen will appear, allowing you to save the project from the work area onto the internal memory / PC Card. For the rest of the procedure, refer to step 4 and following of "**Saving a Project to Disk (Save Project)**" (p. 40).

Importing Individual Wave Files (Wave Import)

You can import individual wave files into the work area.

NOTE

The data will be imported into unused wave numbers. Importing is not possible if there are no empty wave numbers.

1. **Press [MODE].**

   The VC-2 MODE MENU window appears.

2. **Touch <WAVE>.**

   The Wave screen appears.

3. **Touch <Import>.**

   The Wave Import screen appears.

4. **Touch <Int> if you want to import from internal memory, or touch <Card> if you want to import from a PC card.**

5. **From the file list, select the file/folder that you want to import.**

   Here you can use the following functions. Touch the appropriate button to execute.

   Prevw: Preview (audition) the selected file (.wav/.aif).

   Info: View information for the selected file.

   Mark All: Mark all files/folders in the file list.

   Mark: Mark the selected file/folder in the file list.

   Open: Open the selected folder.

   Close: Move to the next higher folder.

6. **Touch <OK>.**

   A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

7. **Touch <EXECUTE> to execute the operation.**

Using the Wave Browser

You can view a list of the imported waves in the work area. Here you can use the following functions. Touch the appropriate button to execute.

Top: Move to the beginning of the list.

End: Move to the end of the list.

Info: View information for the selected file.

Prevw: Preview (audition) the selected file (.wav/.aif).

Search Empty: Move to the first vacant wave.

Copying a Wave (WAVE Copy)

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <WAVE Copy>.**
   The WAVE Copy window appears.
3. **Move the cursor to "Source" and select the copy-source wave.**
4. **Move the cursor to "Destination" and select the copy-destination wave.**
5. **Touch <Execute> to execute the copy operation.**

Moving a Wave (WAVE Move)

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <WAVE Move>.**
   The WAVE Move window appears.
3. **Move the cursor to "Source" and select the move-source wave.**
4. **Move the cursor to "Destination" and select the move-destination wave.**
5. **Touch <Execute> to execute the move operation.**

Exchanging a Wave (WAVE Exchange)

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <WAVE Exchange>.**
   The WAVE Exchange window appears.
3. **Move the cursor to "Source" and select the exchange-source wave.**
4. **Move the cursor to "Destination" and select the exchange-destination wave.**
5. **Touch <Execute> to execute the exchange operation.**

Deleting a Wave (WAVE Delete)

1. **Touch <▼MENU> in the upper right of the screen.**
   A pulldown menu appears.
2. **In the pulldown menu, touch <WAVE Delete>.**
   The WAVE Delete List window appears.
3. **From the list, select the sample that you want to delete.**
   Either turn the **VALUE dial** or use **[INC][DEC]** to select a patch. You can also select a patch by touching it on the display.
4. **Touch <Execute>.**

Settings Common to All Modes (System Mode)

Settings that affect the entire operating environment of the VC-2, such as tuning and MIDI message reception, are referred to as **system functions**. This section explains how to make settings for the System functions and describes the functions of the different System parameters.

How to Make the System Function Settings

1. **Press [MODE].**
   The VC-2 MODE MENU window appears.
2. **Touch <SYSTEM>.**
   The SYSTEM Com Master screen appears.
   The parameters are organized into several editing groups.
3. **Touch one of the buttons at the bottom of the screen to select the edit group containing the parameters you want to set.**
4. **Touch one of the tabs in the left of the screen to select the desired editing screen.**
5. **In each editing screen, touch the touch screen to set the parameters.**
6. **When editing a parameter that requires you to specify a value, move the cursor to the value box of that parameter. Then modify the value by either turning the VALUE dial or pressing [INC] or [DEC]. You can also modify a value by dragging over the touch screen.**
7. **Repeat steps 3–6 to make the settings for the System function.**

Saving the System Settings (Write)

Changes you make to the System function settings are only temporary—they will be discarded as soon as the power is turned off. If you want to keep any changes you've made in the system settings, you must save them.

NOTE

When you perform the save procedure, the data that previously occupied the save destination will be lost. However, the factory setting data can be recovered by performing the Initialization procedure.

1. **After you have edited the settings of the System function, touch <Write>, located in the lower right of the screen.**

Initializing the System Settings (Init)

The current settings of the system functions can be restored to the factory settings.

1. **Touch <Init>, located in the lower right of the screen.**
   A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

2. **Touch <EXECUTE> to execute the operation.**

HINT

If you want the factory settings to be in effect the next time the VC-2 (V-Synth XT) is powered up, touch <Write> to save the settings.

Viewing VC-2's Information (Information)

1. **Touch <▼MENU> in the upper right of the screen.**

   A pulldown menu appears.

2. **In the pulldown menu, touch <Info>.**

   The information screen appears.

   This indicates the version of the VC-2.

3. **Touch <EXIT> to close the window.**

Functions of System Parameters

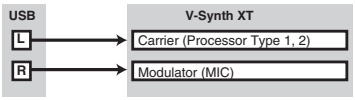
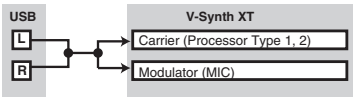
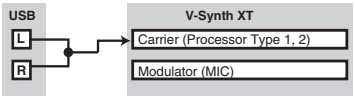
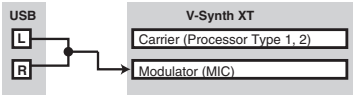
This section explains what the different System parameters do, and also how these parameters are organized.

Settings Common to the Entire System (Common)

Master

Parameter	Value	Explanation
Master Tune	415.3–466.2 Hz	Adjusts the overall tuning of the VC-2. The display shows the frequency of the A4 note (center A).
Master Key Shift	-24–+24	Shifts the overall pitch of the VC-2 in semitone steps.
Master Level	0–127	Adjusts the volume of the entire VC-2.

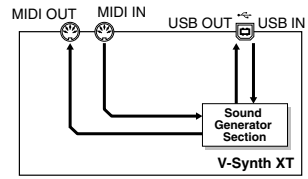
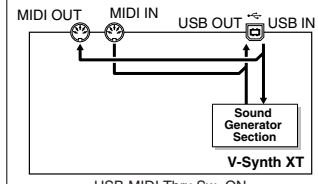
IO

Parameter	Value	Explanation
USB Input Type	The signal that is input from the computer via USB audio is used as the modulator (mic) or as the carrier for Processor Type 1 or 2. * *The signal that is input via USB audio is mixed with the signal from the V-Synth XT's MIC or INPUT jack.* **OFF:** USB audio input is not used. **PARA:**  The USB audio L (left) channel is used as the carrier. The USB audio R (right) channel is used as the modulator (mic). **MIX:**  The USB audio L (left) and R (right) signals are mixed, and used as the modulator (mic) and carrier. **MIX Car:**  The USB audio L (left) and R (right) signals are mixed, and used as the carrier. **MIX Mod:**  The USB audio L (left) and R (right) signals are mixed, and used as the modulator (mic).	
Output Gain	-12–+12 dB	This adjusts the output gain from the VC-2's Analog Out and Digital Out. When, for example, there are relatively few voices being sounded, boosting the output gain can let you attain the most suitable output level for recording and other purposes.
Digital Output Freq	44.1, 48, 96 kHz	Sets the sampling frequency of the digital output.

EQ

Parameter	Value	Explanation
2 Band EQ	OFF, ON	Switch the 2-Band equalizer on/off.
LOW Freq	50, 63, 80, 100, 125, 160, 200, 250, 315, 400, 500, 630, 800, 1000, 1250, 1600, 2000, 2500, 3150, 4000 Hz	Selects the frequency of the low range.
LOW Gain	-15– +15 dB	Adjusts the gain of the low frequency. Positive (+) settings will emphasize the low-frequency range.
HIGH Freq	2000, 4000, 5000, 6300, 8000, 10000, 12500, 16000, 20000 Hz	Selects the frequency of the high range.
HIGH Gain	-15– +15 dB	Adjusts the gain of the high frequency. Positive (+) settings will emphasize the high-frequency range.
TOTAL Gain	-15– +15 dB	Adjusts the total gain.

MIDI/USB

Parameter	Value	Explanation
Device ID	17–32	When you want to transmit or receive System Exclusive messages, set this parameter to match the Device ID number of the other MIDI device.
Clock Source	INT, MIDI, USB MIDI	The LFO cycle or multi-effects changes can be synchronized to a clock (tempo). When this is used by the patch, this Clock Source setting determines the clock which will be used. **INT**: The Patch Tempo will be used. **MIDI**: Synchronize to the clock of an external MIDI. **USB MIDI**: Synchronize to the clock of an external USB MIDI.
Rx Sw	OFF, ON	Specifies whether all MIDI messages will be received (ON) or not (OFF).
Rx Channel	1–16	Sets the Basic Channel (MIDI channel on which the VC-2 receives and transmits messages).
Rx PC	OFF, ON	Specifies whether Program Change messages will be received (ON) or not (OFF).
Rx Bank	OFF, ON	Specifies whether Bank Select messages will be received (ON) or not (OFF).
Rx Sys-Ex	OFF, ON	Specifies whether System Exclusive messages will be received (ON) or not (OFF).
Tx Edit	OFF, ON	Specify whether changes you make in the settings of a patch will be transmitted as system exclusive messages (ON), or will not be transmitted (OFF).
Clock Out	OFF, ON	Specifies whether MIDI clock will be transmitted (ON) or not (OFF).
USB-MIDI Thru Sw	OFF, ON	This switch specifies whether MIDI messages received at the MIDI connector will be re-transmitted from the MIDI OUT connector (ON) or not (OFF).  USB-MIDI Thru Sw=OFF  USB-MIDI Thru Sw=ON
Volume Expression Level Control	OFF, ON	Specifies whether received Volume or Expression Pedal messages will adjust the output volume (ON), or will be ignored (OFF).

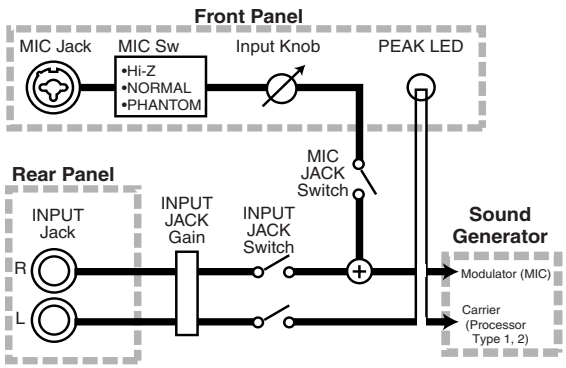
Chord Memory

Parameter	Value	Explanation
Chord Memory Sw	OFF, ON	Switches the Multi Chord Memory (one-finger chord) function on/off. * *If you want to synchronize to an external device, set Clock Source (p. 38) to EXTERNAL, then get your external device to transmit clock messages. If you fail to do this, chords will not play correctly.*
Grid Resolution	Dotted 8th note–64th note	Each note within the chord will be played separately at the timing interval you specify here.
Code set	C–B	Specify a chord for each key in the range C–B.
KEEP	OFF, ON	When entering a chord from the keyboard, this parameter specifies whether the keys you press will be held in their pressed state (ON) or not (OFF). If this is ON, the key will be maintained in a "pressed" state even when you release it.

Parameter	Value	Explanation
STORE	—	Store the chord you specified from the keyboard into the chord set.

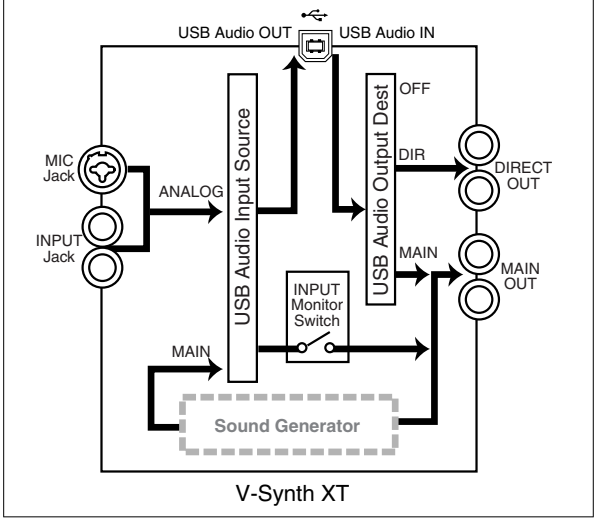
Audio I/F

Parameter	Value	Explanation
MIC Jack Switch	OFF, ON	Specifies whether the front panel MIC jack will be enabled (ON) or disabled (OFF).
INPUT Jack Switch	OFF, ON	Specifies whether the rear panel INPUT jacks will be enabled (ON) or disabled (OFF).
INPUT Jack Gain	0db, +12db	Sets the gain of the rear panel INPUT jacks.



USB Audio Input Source	OFF, MAIN, ANALOG	When the V-Synth XT is connected via USB to your computer, this specifies the source of the USB audio that will be output to the computer.
USB Audio Input Monitor Sw	OFF, ON	Specifies whether USB Audio Input Source monitoring will be sent from the V-Synth XT's MAIN OUT (ON) or will not be sent (OFF).
USB Audio Output Dest	OFF, MAIN, DIR	When the V-Synth XT is connected via USB to your computer, this specifies the output destination of the USB audio that is received from the computer.

Parameter	Value	Explanation



Controller Settings (Controller)

Tx

Parameter	Value	Explanation
Patch Tx Ch	1–16, RX CH, OFF	Specifies the transmit channel of MIDI messages in Patch mode. If you do not want to transmit MIDI messages to external MIDI devices, turn this parameter "OFF." If you want the transmit channel to always match the Patch Receive Channel, set this parameter to "RX CH."
Tx PC	OFF, ON	Specifies whether Program Change messages will be transmitted (ON) or not (OFF).
Tx Bank	OFF, ON	Specifies whether Bank Select messages will be transmitted (ON) or not (OFF).
Tx Active Sens	OFF, ON	Specifies whether Active Sensing messages will be transmitted (ON) or not (OFF).

Breath

Parameter	Value	Explanation
Voice Assign	OFF, CC01–31, CC33–95	Specifies the MIDI controller number that will transmit the volume data extracted from the mic input signal. **OFF**: No message will be transmitted. **CC01-31, 33-95**: Controller numbers 1-31, 33-95

Saving and Loading Projects (Disk Mode)

NOTE

Never turn off the power of the V-Synth XT while performing an operation in Disk mode. Doing so may destroy the files.

Saving a Project on Disk (Save Project)

Save the project in the work area to internal memory / PC Card.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <DISK>.

The DISK UTILITY MENU window appears.

3. Touch <Save Project>.

The Disk Save Project screen appears.

4. Select the save-destination project.

HINT

If you want to save the data as a new project, touch <New Project>. The PROJECT Name window will appear. Assign a name to the new project.

5. Touch <OK>.

A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

6. Touch <EXECUTE> to execute the operation.

When the operation is completed, the display will briefly indicate "COMPLETED!."

7. Press [EXIT] to exit Disk mode.

Loading a Project from Disk (Load Project)

This function loads a project on internal memory / PC Card into the V-Synth XT's work area.

NOTE

When a project is loaded, work area will be rewritten. If work area contains important data, you must save it before you load other data.

1. Press [MODE].

The VC-2 MODE MENU window appears.

2. Touch <DISK>.

The DISK UTILITY MENU window appears.

3. Touch <Load Project>.

The Disk Load Project screen appears.

4. Select the project that you want to load.

5. Touch <OK>.

A WARNING window appears.

HINT

If you want to cancel the procedure at this point, touch <CANCEL>.

6. Touch <EXECUTE> to execute the operation.

When the operation is completed, the display will briefly indicate "COMPLETED!."

7. Press [EXIT] to exit Disk mode.

Reset to Default Factory Settings (Factory Reset)

This restores all VC-2 data in the internal memory to the factory-set condition (Factory Reset).

NOTE

If there is important data you've created that's stored in the internal memory, all such data is discarded when a Factory Reset is performed. If you want to keep the existing data, USB backing up onto a computer (p. 42) or transmit it to an external MIDI device and save it (p. 21).

1. **Press [MODE].**

   The VC-2 MODE MENU window appears.

2. **Touch <FACTORY RESET>.**

   The Factory Reset screen appears.

3. **Touch <Execute> to execute the Factory Reset.**

   When the display indicates "COMPLETED!," the factory reset operation has been completed.

Backing Up Data to Your Computer (USB Mode)

By connecting the V-Synth XT with your computer via a USB cable, you can transfer files such as projects, patches, and wave data from internal memory or a memory card to and from the hard disk or other media of your computer, in order to back up your data.

You can copy waves from your computer to the VC-2, or back up VC-2 projects to your computer.

For details on the USB functionality, refer to the chapter "**Connecting to Your Computer via USB (USB Mode)**" in the "**V-Synth XT Owner's Manual**."

Effects List

MFX Parameters

MFX (Multi-Effects) provides 41 types of effect. This section explains the features of each MFX, and the functions of the parameters.

Explanations for each MFX Type are given on the following pages.

01: Parametric EQ (Parametric Equalizer)

This is a 4 band (low range, midrange x 2, high range) stereo parametric equalizer.

Parameter	Value	Description
Low Freq	50–4000 Hz	Frequency of the low range
Low Gain	-15– +15 dB	Gain of the low range
Mid 1 Freq	50–20000 Hz	Frequency of the middle range 1
Mid 1 Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range 1 Set a higher value for Q to narrow the range to be affected.
Mid 1 Gain	-15– +15 dB	Gain of the middle range 1
Mid 2 Freq	50–20000 Hz	Frequency of the middle range 2
Mid 2 Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range 2 Set a higher value for Q to narrow the range to be affected.
Mid 2 Gain	-15– +15 dB	Gain of the middle range 2
Hi Freq	2000–20000 Hz	Frequency of the high range
Hi Gain	-15– +15 dB	Gain of the high range
Total Gain	-15– +15 dB	Output Level

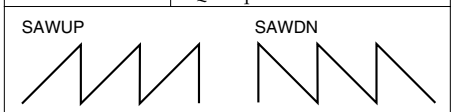
02: Graphic EQ (Graphic Equalizer)

This simulates a 12-band stereo graphic equalizer.

Parameter	Value	Description
180Hz Gain	-15– +15 dB	Gain of each frequency band
250Hz Gain		
355Hz Gain		
500Hz Gain		
710Hz Gain		
1000Hz Gain		
1400Hz Gain		
2000Hz Gain		
2800Hz Gain		
4000Hz Gain		
5600Hz Gain		
8000Hz Gain		
Total Gain	-15– +15 dB	Output Level

03: Resonant Filter

It allows for cyclical control of the cutoff frequency using an LFO. It allows you to make drastic changes in the frequency response of the input signal by the cutoff frequency and feedback, making the sound brighter or darker, or giving it a distinctive character.

Parameter	Value	Description
Cutoff Freq	50–20000 Hz	Basic frequency of the filter The LFO will control the cutoff frequency with this value as its maximum level.
Resonance	0–127	Filter's resonance level Raising the setting increases resonance near the cutoff frequency, producing a uniquely characteristic sound.
Band Mode	LOW, MID, HIGH, LOW+MID, MID+HIGH, ALL	Frequency range to which the filter will be applied LOW: low frequency band MID: mid-range frequency HIGH: high frequency LOW+MID: low and middle range frequency MID+HIGH: middle and high range frequency ALL: all ranges
Sweep Waveform	TRI, SAWUP, SAWDN, SQR	LFO waveform TRI: Triangle wave SAWUP: Sawtooth Wave SAWDN: Sawtooth Wave SQR: Square wave
		
Sweep Rate	0.05–10.0 Hz, note	Frequency of the LFO modulation
Sweep Depth	0–127	Modulation depth of the LFO
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

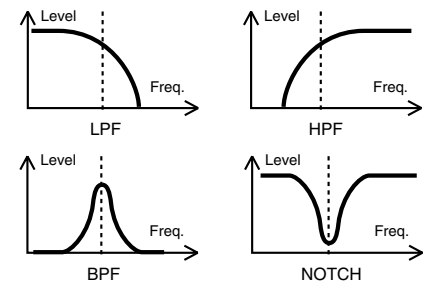
04: Isolator and Filter

A 3-band isolator, filter, and low booster are connected in stereo in series.

Isolator is an equalizer which cuts the volume greatly, allowing you to add a special effect to the sound by cutting the volume in varying ranges.

The filters allow you to modify the frequency response of the input sound widely and give sound a character.

The low booster emphasizes the bottom to create a heavy bass sound.

Parameter	Value	Description
Low Band Level Mid Band Level Hi Band Level	-60– +4 dB	These specify each level of the Low, Mid, and High frequency ranges. At -60 dB, the sound becomes inaudible. 0 dB is equivalent to the input level of the sound.
AP Low Sw	OFF, ON	Turns the Anti-Phase function on and off for the Low frequency ranges. When turned on, the counter-channel of stereo sound is inverted and added to the signal.
AP Low Level	0–127	Adjusts the level settings for the Low frequency ranges. Adjusting this level for certain frequencies allows you to lend emphasis to specific parts. (This is effective only for stereo source.)
AP Mid Sw	OFF, ON	Settings of the Anti-Phase function for the Middle frequency ranges The parameters are the same as for the Low frequency ranges.
AP Mid Level	0–127	
Filter Type	Type of filter **THRU:** no filter is used **LPF:** Passes frequencies below the Cutoff. **BPF:** Passes frequencies near the Cutoff. **HPF:** Passes frequencies above the Cutoff. **NOTCH:** Passes frequencies other than those near the Cutoff.	
		
Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep -12 dB per octave: gentle
Filter Cutoff	0–127	Cutoff frequency of the filter The closer to zero it is set, the lower the cutoff frequency becomes; set it closer to 127, and the cutoff frequency becomes higher.
Filter Resonance	0–127	Resonance level of the filter Raising the setting increases resonance near the cutoff frequency, giving the sound a special characteristic.
Filter Gain	0– +24 dB	Compensates for the volume dropped in the cut frequency range with some filters. The level of compensation increases as the value is increased, and raise the volume.
LowBoost Level	-15– +15 dB	Increasing this value gives you a heavier low end. * Depending on the Isolator and filter settings this effect may be hard to distinguish.

05: Distortion / OD (Distortion / Overdrive)

Overdrive produces a natural-sounding distortion similar to that produced by a vacuum tube amplifier. Distortion produces a more intense distortion than the overdrive effect.

Parameter	Value	Description
Input Mode	MONO, STEREO	Selects whether to input in stereo or in monaural. If MONO is selected, the left and right sound will be mixed, and input as monaural.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the Amp Simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Output Level	0–127	Output Level
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

06: Amp Simulator (Guitar Amp Simulator)

This is an effect that simulates an guitar amp.

Parameter	Value	Description
NS Sw	OFF, ON	Turns the noise suppressor on/off. The noise suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.
NS Threshold	0–127	Adjusts the level at which the noise suppressor will begin to take effect. When the signal drops below the specified level, it will be muted.
NS Release	0–127	Sets the transition time from when the noise suppression starts to the point where the volume reaches 0.

Parameter	Value	Description
Amp Type (Amp)	Type of guitar amp **JC-120:** The sound of a Roland JC-120. **CLEAN TWIN:** The sound of a standard built-in type vacuum tube amp. **MATCH DRIVE:** The sound of a recent vacuum tube amp widely used in blues, rock, and fusion. **BG LEAD:** The sound of a vacuum tube amp representative of the late 70's and the 80's. **MS1959 I:** The sound of the large vacuum tube amp stack that was indispensable to the British hard rock of the 70's, with input I connected. **MS1959 II:** The same amp as MS1959 I, but with input II connected. **MS1959 I+II:** The same amp as MS1959 I, but with inputs I and II connected in parallel. **SLDN LEAD:** The sound of a vacuum tube amp usable in a wide variety of styles. **METAL 5150:** The sound of a large vacuum tube amp suitable for heavy metal. **METAL LEAD:** A metal lead sound with a distinctive mid-range. **OD-1:** The sound of the BOSS OD-1 compact effects processor. **OD-2 TURBO:** The sound of the BOSS OD-2 compact effects processor with the Turbo switch on. **DISTORTION:** Distortion sound. **FUZZ:** Fuzz sound.	
Volume	0–127	Volume and degree of distortion of the amp
Bass	0–127	Tone of the bass/mid/treble range * Middle cannot be set if MATCH DRIVE is selected for the Amp Type.
Middle		
Treble		
Presence	0–127	Tone for the ultra high frequency range
Master Volume	0–127	Volume of the entire amp
Brightness Sw (Bright Sw)	OFF, ON	Turning this On will produce a sharper and brighter sound. * This parameter can be set if the Amp Type is set to JC-120, CLEAN TWIN, or BG LEAD.
Gain Sw	LOW, MID, HIGH	Degree of amp distortion
Sp Sim Sw	OFF, ON	Turns the Speaker Simulator on/off.
Sp Type	(see below)	Type of speaker
Mic Setting	1–10	Adjusts the location of the mic that is recording the sound of the speaker. Increasing this value will produce the effect of the mic being further away from the center of the speaker cone.
Mic Level	0–127	Volume of the microphone
Direct Level	0–127	Volume of the direct sound
Level	0–127	Output Level

Specifications of each Speaker Type

The speaker column indicates the diameter of each speaker unit (in inches) and the number of units.

Type	Cabinet	Speaker	Microphone
SMALL	small open-back enclosure	10	dynamic

Type	Cabinet	Speaker	Microphone
MIDDLE	open back enclosure	12 x 1	dynamic
JC-120	open back enclosure	12 x 2	dynamic
BUILT IN 1	open back enclosure	12 x 2	dynamic
BUILT IN 2	open back enclosure	12 x 2	condenser
BUILT IN 3	open back enclosure	12 x 2	condenser
BUILT IN 4	open back enclosure	12 x 2	condenser
BUILT IN 5	open back enclosure	12 x 2	condenser
BG STACK 1	sealed enclosure	12 x 2	condenser
BG STACK 2	large sealed enclosure	12 x 2	condenser
MS STACK 1	large sealed enclosure	12 x 4	condenser
MS STACK 2	large sealed enclosure	12 x 4	condenser
METAL STACK	large double stack	12 x 4	condenser

Recommended combination of pre-amp and speaker

Amp type	Speaker type
BG LEAD	BG STACK 1–2, MIDDLE
MS1959 II	BG STACK 1–2, METAL STACK
MS1959 I+II	BG STACK 1–2, METAL STACK
SLDN LEAD	BG STACK 1–2, METAL STACK
METAL 5150	BG STACK 1–2, METAL STACK
METAL LEAD	BG STACK 1–2, METAL STACK
OD-2 TURBO	BUILT IN 1–4
DISTORTION	BUILT IN 1–4
FUZZ	BUILT IN 1–4

07: Auto Wah

Wah is an effect that modifies the frequency characteristics of a filter over time, producing a unique tone. The wah effect can change in relation to the volume of the input signal, and/or cyclically.

Parameter	Value	Description
Filter Type	LPF, BPF	Type of filter LPF: The wah effect will be applied over a wide frequency range. BPF: The wah effect will be applied over a narrow frequency range
Polarity	DOWN, UP	When using the volume of the input signal to control the wah effect, this setting determines whether the frequency of the filter will be moved upward (UP) or downward (DOWN).
Frequency	0–127	Adjusts the frequency at which the wah effect will apply.
Peak	0–127	Adjusts the amount of the wah effect that will occur in the range of the center frequency. Set a higher value for Q to narrow the range to be affected.
Trigger Sens	0–127	Adjusts the sensitivity with which the wah effect is controlled.
Rate	0.05–10.0 Hz, note	Frequency of modulation
Depth	0–127	Depth of modulation
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

08: Humanizer

This adds a vowel character to the sound, making it similar to a human voice.

Parameter	Value	Description
Overdrive Sw	OFF, ON	Turns Drive on/off.
Drive	0–127	Degree of distortion
Vowel 1	a, e, i, o, u	First vowel
Vowel 2	a, e, i, o, u	Second vowel
Rate	0.05–10.0 Hz, note	Frequency at which the two vowels will be switched
Depth	0–127	Effect depth With a setting of 0, it will be fixed at Vowel 1.
Trigger Sens	-60–0 dB, LFO	Level at which the two vowels will be switched -60–0 dB: When the specified level is exceeded, the sound will change to the other vowel at the frequency (speed) specified by Rate. LFO: The two vowel sounds will alternate at the frequency specified by Rate, regardless of the level.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

09: Dynamic Processor (Stereo Dynamic Processor)

A comp/limiter, enhancer, 3-band equalizer, and noise suppressor are connected in series.

Comp/Limiter is able to use as a compressor, which controls inconsistencies in sound levels by suppressing high sound levels while lifting weaker signals, or as a limiter that prevents the signal from reaching exceedingly high levels.

Enhancer regulates the high-end overtones, clarifying the sound and the sound contour.

3-Band Equalizer works in three frequency ranges: Low, Mid, and High. You can set the frequencies and boost or cut the level.

Noise Suppressor leaves the original sound unmodified, but mutes only the noise during the silent intervals.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60–0 dB	Sets the volume level at which the compression begins.
Comp Attack	0–127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0–127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the "source sound:output sound" compression ratio.
Comp Gain	-60– +12 dB	Output gain
Enhan Sw	OFF, ON	Turns the enhancer on/off.
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
NS Sw	OFF, ON	Turns the noise suppressor on/off.
NS Threshold	0–127	Adjusts the level at which the noise suppressor will begin to take effect. When the signal drops below the specified level, it will be muted.
NS Release	0–127	Sets the transition time from when the noise suppression starts to the point where the volume reaches 0.

10: Tape Echo Simulator

This virtual tape echo gives you real tape delay sound. This simulates the tape echo part of Roland's RE-201 Space Echo.

Parameter	Value	Description
Mode	S, M, L, S+M, S+L, M+L, S+M+L	Sets the combination of playback heads to be used. The RE-201 had three playback heads to make different delay times (Short, Medium, and Long delay) at once. For example, to use the short and middle heads, select S+M.
Repeat Rate	0–127	Sets the tape speed. This corresponds to the delay time in a contemporary delay effect.
Intensity	0–127	Sets the repeat times of the delayed sound. This is analogous to a contemporary delay's feedback setting.
Bass Treble	-100– +100	These are the echo sound's bass and treble adjustments. When set to 0, they make no change to the sound.
Head S Pan Head M Pan Head L Pan	L63–63R	These are the pan (left-right) settings for each of the heads for Short, Medium, and Long delay time. * This parameter does not appear on the original RE-201.
Tape Distortion (Tape DS)	0–5	Adds the distortion characteristic of tape. The distortion gets more intense as the value is increased.
W/F Rate	0–127	Frequency of the wow and flutter modulation The wavering of multiple pitches that appears from tape wear and irregularities in rotation is called wow and flutter.
W/F Depth	0–127	Modulation depth of the wow and flutter
Echo Level	0–127	Volume of the echo sound.

11: Stereo Delay

This is a stereo delay. Depending on the length of the delay you set, you can get long echoes, thick sounds, or spatial sounds.

Parameter	Value	Description
Mode	MONO, STEREO, ALTERNATE	Switches stereo, monaural, or alternate. MONO: This is a single-input, dual-output delay. Stereo sound (left and right) are mixed before being input. STEREO: This is a dual-input, dual-output delay. The delay sound output features the same stereo placement as that of the input. ALTERNATE: The left and right delay sound output alternately. (Alternate delay)

Parameter	Value	Description
Delay Time	0–1300 ms (MONO), 0–650 ms (STEREO, ALTERNATE), note	Adjusts the delay time from the direct sound until the delay sound is heard.
L-R Shift	0–650 ms, note	Of the left and right delay sounds, the delay time will be increased for only one side. If the L-R order is L→R, the R sound will be later. In the case of R→L, the L sound will be later. When the mode is set to MONO or ALTERNATE, this setting will be ignored.
L-R Order	L→R, R→L	In STEREO or ALTERNATE mode, this setting determines which of the left or right sides has the delay sound before the other L→R: The left side is expressed first R→L: The right side is expressed first * In MONO mode, this setting will be ignored.
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the delay sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

12: Multi Tap Delay

The effect has five delays. Each of the Delay Time parameters can be specified as a note length of the selected tempo. You can also set the panning and level of each delay sound.

Parameter	Value	Description
Delay 1–5	0–1300 ms, note	Specifies the delay time from the original sound until each delay sound (Delay 1/2/3/4/5) is heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the feedback sound
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay 1–5 Level	0–127	Adjusts the volume of each delay sound (Delay 1/2/3/4/5)
Delay 1–5 Pan	L63–63R	Adjusts the pan of each delay sound (Delay 1/2/3/4/5)
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

13: Reverse Delay

Adds the reverse of the input sound as the delay sound.

Parameter	Value	Description
Threshold	0–127	Specifies the input level at which the delay will begin to apply.
Rvs Dly Time	0–650 ms, note	Specifies the delay time from the original sound until the delay sound is heard.
Rvs Feedback	-98– +98 %	Adjusts the proportion of the reverse delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

14: Vocal Echo

This effect simulates a karaoke echo.

Parameter	Value	Description
Delay Time	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Pre LPF Freq	500–15000 Hz, THRU	Sets the filter's cutoff frequency (THRU: no filter is used)
Mod Rate	0.05–10.0 Hz, note	Specifies the modulation speed of the modulation effect.
Mod Depth	0–127	Specifies the modulation depth of the modulation effect.
Diffusion	0–100	Specifies the spaciousness of the delay sound.
Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Echo Level	0–127	Volume of the echo sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

15: Band Pass Delay

This is a delay with a band pass filter (a filter that outputs only a specified frequency range) on each of five delays. A phaser is included before the delay. Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.

Parameter	Value	Description
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0–127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the each delay sound is heard.
Fbk Dly Time	0–1300 ms, note	Adjusts the delay time for the feedback sound.
Dly Time Dev	0–1300 ms, note	Specifies the differences in delay time for each of the delay sounds.
Delay Level	0–127	Adjusts the volume of each delay sound.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Delay Pan Type	1–10	Specifies the pan of each delay sound. Ten settings are provided as various panning combinations of the delay sounds (see below).
BPF 1–5 Freq	50–20000 Hz	Sets the center frequency for each band pass filter (1–5).
BPF 1/2 Q	0.3–24.0	Specify the output bandwidth for each band pass filter (1–5).
BPF 3/4/5 Q		

Parameter	Value	Description
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the delay sound (WET)

Delay Pan Type

Values	Dly 1	Dly 2	Dly 3	Dly 4	Dly 5
1	L63	L32	0	32R	63R
2	L63	32R	L32	63R	0
3	L63	63R	L32	32R	0
4	32R	L32	L63	0	63R
5	63R	0	L63	L32	32R
6	L32	32R	L63	63R	0
7	0	63R	L63	32R	L32
8	0	63R	L32	32R	L63
9	0	32R	L32	63R	L63
10	63R	32R	0	L32	L63

16: Analog Delay→Chorus

This effect reproduces the sound of the BOSS CE-1 Chorus Ensemble. To reproduce the sound of the unit at the time, a monaural analog-type delay is first inserted in series.

Parameter	Value	Description
Dly Sw	OFF, ON	Turns the delay on/off.
Dly Repeat Rate	0–127	Corresponds to the delay time in a delay effects.
Dly Intensity	0–127	Corresponds to the feedback setting in a delay effects.
Dly Level	0–127	Sets the volume of the delay sound.
Chorus Sw	OFF, ON	Turns chorus or vibrato on/off.
Chorus Mode	CHORUS, VIBRATO	Switches the sound between chorus and vibrato modes.
Chorus Intensity	0–127	When Chorus Mode is CHORUS, this sets the pitch vibrato speed.
Vibrato Depth	0–127	When Chorus Mode is VIBRATO, this sets the pitch vibrato depth.
Vibrato Rate	0–127	When Chorus Mode is VIBRATO, this sets the pitch vibrato speed.
Chorus Out Mode	MONO, ST-1, ST-2	Switches the output format (mono/stereo). MONO: Output is monaural. ST-1: Chorus sound of the pitch vibration which phase is inverted between left and right is mixed with the source sound. This is a broader chorus, with a weaker feeling of placement. ST-2: The left output contains the source sound, and the right side has the wavering chorus sound.

17: Digital Chorus

This is a stereo chorus or flanger. Equalizers are provided before (Pre) and after (Post) the chorus (or flanger).

Parameter	Value	Description
Mode	CHORUS, FLANGER	Selects either chorus or flanger.
Rate	0.05–10.0 Hz, note	Sets the cycle for the chorus or flanger sound undulations.
Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Phase	0–180 deg	Specifies the spaciousness of the chorus or flanger sound.
Pre Low Freq	50–4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15– +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000–20000 Hz	Frequency of the high range (Pre)
Pre Hi Gain	-15– +15 dB	Gain of the high range (Pre)
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Feedback	-98– +98 %	Adjusts the proportion of the chorus or flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover HiFreq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Modulation Level	0–127	Volume of the chorus or flanger sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range (Post)
Ps Low Gain	-15– +15 dB	Gain of the low range (Post)
Ps Hi Freq	2000–20000 Hz	Frequency of the high range (Post)
Ps Hi Gain	-15– +15 dB	Gain of the high range (Post)

18: Space Chorus

This effect reproduces the sound of Roland's SDD-320 spatial expression effects. Greater breadth is added.

Parameter	Value	Description
Mode	1, 2, 3, 4, 1+4, 2+4, 3+4	Selects the way in the chorus will change. The SDD-320 features four mode buttons for changing the effect. This setting determines which buttons are to be pressed. ("1+4" represents the condition when Buttons 1 and 4 are pressed simultaneously.)
Chorus Level	0–127	Volume level of the chorus sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

19: Hexa Chorus

Hexa-chorus is a six-stage chorus which adds depth and spaciousness to the sound. (Six chorus sounds with different delay times are overlaid.) An equalizer is provided before (Pre) and after (Post) the hexa chorus.

Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus sound is heard.
Pre Dly Dev	0–50.0 ms	Specifies the differences in Pre Delay time for each of the chorus sounds
Rate	0.05–10.0 Hz, note	Specifies the modulation frequency of the chorus sound.
Depth	0–127	Specifies the modulation depth of the chorus sound.
Depth Deviation	0–127	Specifies the difference in modulation depth between each of the chorus sounds.
Pan Deviation	L63–63R	Specifies the difference in stereo position between each of the chorus sounds. 0: All of the chorus sounds will be panned to the center. L20/R20: each chorus sound will be placed in 30 degree intervals relative to the center position.
Chorus Level	0–127	Volume level of the chorus sound
Pre Low Freq	50–4000 Hz	Frequency of the low range (Pre)
Pre Low Gain	-15– +15 dB	Gain of the low range (Pre)
Pre Hi Freq	2000–20000 Hz	Frequency of the high range (Pre)
Pre Hi Gain	-15– +15 dB	Gain of the high range (Pre)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

20: Analog Flanger

This effect reproduces the sound of Roland's SBF-325 analog flanger. You can get three different types of flanger sounds (adding a metallic swelling sound to the source sound) and chorus like effect.

Parameter	Value	Description
Mode	FL1, FL2, FL3, CHO	Sets the effect type. FL1: A general monaural flanger FL2: A stereo flanger that utilizes the stereo placement of the source sound FL3: A cross mix flanger that providing a more intense effect CHO: Chorus effect
Rate	0.02–5.00 Hz, note	Sets the rate of the swelling of the flanger sound.
Depth	0–127	Specifies the modulation depth of the flanger sound.
Manual	0–127	Adjusts the center frequency to which the flanger effect is applied.
Feedback	0–127	Sets the intensity of the flanger's effect. When the mode is set to CHO, this setting will be ignored.
CH-R Mod Phase	NORM, INV	Sets the phase of the right channel. This is usually set to Normal (NORM). Setting this to Invert (INV) inverts the phase of the modulation (rise and fall) in the right channel.
CH-L Phase CH-R Phase	NORM, INV	Sets the phase of the left and right channels when the source sound is mixed with the flanging sound. NORM: Positive phase (+) INV: negative phase (-)

21: BOSS Flanger

This effect features a pair of the same flanger circuits used in the BOSS compact flangers, connected in parallel for stereo input. This adds a particular metallic-sounding modulation to the source sound.

Parameter	Value	Description
Type	NORMAL, HI-BAND	Selects the model of flanger simulated. NORMAL: Normal type (BOSS BF-2) HI-BAND: High-Band type (BOSS HF-2). Setting HI-B raise the flanging sound one octave above that at the NORM.
Manual	0–127	Sets the center frequency for the effect.
Depth	0–127	Sets the depth of the swelling of the flanger sound.
Rate	0.05–10.0 Hz, note	Adjusts the modulation speed of the flanger effect.
Resonance	0–127	Sets the intensity of the flanger's effect. * If the Feedback Mode is CROSS, this setting is ignored.

Parameter	Value	Description
Phase	0–180 deg	Specifies the spaciousness of the flanger sound.
Feedback Mode	NORMAL, CROSS	Specifies the input destination to which the flanger sound will be returned. NORMAL: The left flanger sound will be returned to the left input, and the right flanger sound to the right input. CROSS: The left flanger sound will be returned to the right input, and the right flanger sound to the left input.
Feedback	-98– +98 %	This setting makes the flanging sound of each of right and left channels return to the input of the opposite channel. Negative (-) settings will invert the phase. * When the Feedback Mode is set to NORMAL, this setting will be ignored.
Cross Mix Level	-100– +100	This setting makes the flanging sound from each of the right and left channels mix it with the flanging sound of the opposite channel. Negative (-) settings will invert the phase.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

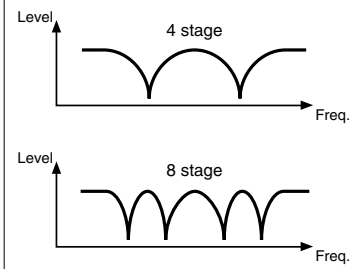
22: Step Flanger

This is a flanger in which the flanger pitch changes in steps. The speed at which the pitch changes can also be specified in terms of a note-value of a specified tempo.

Parameter	Value	Description
Pre Dly Time	0–50.0 ms	Specifies the time delay from the original sound until the flanger sound is heard.
Rate	0.05–10.0 Hz, note	Specifies the modulation frequency of the flanger sound.
Depth	0–127	Specifies the modulation depth of the flanger sound.
Feedback	-98– +98 %	Adjusts the proportion of the flanger sound that is fed back into the effect. Negative (-) settings will invert the phase.
Phase	0–180 deg	Specifies the spaciousness of the flanger sound.
Step Rate	0.05–10.0 Hz, note	Specifies the frequency of pitch change.
Flanger Level	0–127	Volume of the flanger sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

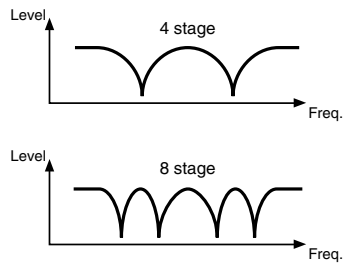
23: Analog Phaser

This effect features two analog-type phasers arranged in parallel, making it stereo compatible. The sound as it cyclically drifts in and out of phase is added to the source sound, creating the modulation with the characteristic of phasers.

Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAGE) or eight (8STAGE)). Setting this to eight stages (8STAGE) increases the number of the frequency points that sound is canceled, giving a sharper effect.
		
Center Freq	0–127	Sets the center frequency to which the phaser effect is applied. Increasing this value moves the effect point of the phaser into higher frequency ranges.
Resonance	0–127	Amount of feedback Increasing this value gives a more distinctive sound to the effect.
LFO 1/2 Rate	0.02–5.00 Hz, note	Sets the rate of the swelling sound.
LFO 1/2 Depth	0–127	Specifies the depth of modulation.
LFO 1/2 Phase	NORM, INV	Sets the phase of both left and right swelling. NORM: The left and right phase will be the same. INV: The left and right phase will be opposite.

24: Digital Phaser

Phaser is an effect that adds a phase-shifted sound to the original sound to create time-varying change, modulating the sound.

Parameter	Value	Description
Shift Mode	4STAGE, 8STAGE	Sets the number of stages in the phase shift circuit (four (4STAGE) or eight (8STAGE)). Setting this to eight stages (8STAGE) increases the number of the frequency points that sound is canceled, giving a sharper effect.
		
Manual	0–127	Specifies the center frequency at which the sound is modulated.
Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Depth	0–127	Specifies the depth of modulation.
Phase	NORM, INV	Sets the phase of both left and right swelling. NORM: The left and right phase will be the same. INV: The left and right phase will be opposite.
Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Mix Level	0–127	Volume of the phase-shifted sound, relative to the direct sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

25: Rotary

The Rotary effect simulates the sound of the rotary speakers often used with the electric organs of the past. Since the movement of the high range and low range rotors can be set independently, the unique type of modulation characteristic of these speakers can be simulated quite closely. This effect is most suitable for electric organ Patches.

Parameter	Value	Description
Speed	SLOW, FAST	Simultaneously switch the rotational speed of the low frequency rotor and high frequency rotor SLOW: Slows down the rotation to the Slow Rate. FAST: Speeds up the rotation to the Fast Rate.
Low Slow Rate	0.05–10.0 Hz, note	Slow speed (SLOW) of the low frequency rotor
Low Fast Rate	0.05–10.0 Hz, note	Fast speed (FAST) of the low frequency rotor
Low Acceleration	0–15	Adjusts the time it takes the low frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed.
Low Level	0–127	Volume of the low frequency rotor
Hi Slow Rate	0.05–10.0 Hz, note	Slow speed (SLOW) of the high frequency rotor
Hi Fast Rate	0.05–10.0 Hz, note	Fast speed (FAST) of the high frequency rotor
Hi Acceleration	0–15	Adjusts the time it takes the high frequency rotor to reach the newly selected speed when switching from fast to slow (or slow to fast) speed.
Hi Level	0–127	Volume of the high frequency rotor
Separation	0–127	Spatial dispersion of the sound
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

26: Tremolo/Auto Pan

This is a stereo tremolo or auto-pan effect. Tremolo cyclically modulates the volume to add tremolo effect to the sound. The Auto Pan effect cyclically modulates the stereo location of the sound.

Parameter	Value	Description
Mode	TREMOLO, AUTO PAN	Selects whether to use tremolo or auto pan.
Waveform	TRI, SAWUP, SAWDN, SQR, SIN	Selects the type of modulation. TRI: Triangle wave SAWUP/SAWDN: Sawtooth Wave SQR: Square wave SIN: Sine wave
		
Rate	0.05–10.0 Hz, note	Frequency of modulation
Depth	0–127	Depth of modulation

Parameter	Value	Description
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

27: Stereo Pitch Shifter

This effect features two pitch shifters arranged in parallel, making it stereo compatible. It can shift the pitch of the input signal up to one octave up or down.

Parameter	Value	Description
Input Mode	MONO, STEREO	Selects either stereo input or monaural input.
Grade	1–5	Sets the grade of the effect sound. The higher the value is set, the more natural-sounding can be obtained; however, this increases the delay from the source sound as well.
Coarse Pitch A/B	-12– +12 semitone	Specifies the pitch shift amount in semitones for pitch shift A or B.
Fine Pitch A/B	-100– +100 cent	Adjusts the pitch shift amount in 2-cent units (1 cent = 1/100 of a semitone) for pitch shift A or B.
Pre Delay A/B	0–500 ms	Adjusts the delay time from the direct sound until the pitch shift A or B sound is heard.
Level A/B	0–127	Volume of the pitch shift A or B sound.
Pan A/B	L63–63R	Pan of the pitch shift A or B sound.
Direct Level	0–127	Volume of the direct sound.
Feedback	-98– +98 %	Adjusts the proportion of the pitch shift sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the pitch shift sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

28: OD/DS→Cho/Flg (Overdrive/Distortion→Chorus/Flanger)

This effect connects either Overdrive or Distortion and either Chorus or Flanger.

Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi-Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

29: OD/DS→Delay (Overdrive/Distortion→Delay)

This effect connects either Overdrive or Distortion and Delay in series.

Parameter	Value	Description
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

30: Cho/Flg→Delay (Chorus/Flanger→Delay)

This effect connects either Chorus or Flanger and Delay in series.

Parameter	Value	Description
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98%	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi-Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98%	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

31: Enh→Cho/Flg (Enhancer→Chorus/Flanger)

This effect connects Enhancer and either Chorus or Flanger in series.

Parameter	Value	Description
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Xover Low-Freq	50–4000 Hz	Attenuates the effect in the range below the specified frequency.
Xover Low Gain	-36–0 dB	Specifies how greatly the low range will be attenuated.
Xover Hi-Freq	2000–20000 Hz	Attenuates the effect in the range above the specified frequency.
Xover Hi Gain	-36–0 dB	Specifies how greatly the high range will be attenuated.
Mod Level	0–127	Volume of the chorus or flanger sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

32: Enh→Delay (Enhancer→Delay)

This effect connects an Enhancer and a Delay in series.

Parameter	Value	Description
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98%	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.
Ps Low Freq	50–4000 Hz	Frequency of the low range
Ps Low Gain	-15– +15 dB	Gain of the low range
Ps Hi Freq	2000–20000 Hz	Frequency of the high range
Ps Hi Gain	-15– +15 dB	Gain of the high range

33: Vocal Multi

A limiter/de-esser, enhancer, 3-band equalizer, and delay are connected in series.

A limiter holds down high signal levels to prevent distortion.

A de-esser cuts the sibilant sounds of a voice, producing a gentler tone.

Parameter	Value	Description
Limtr Mode	LIMITER, DE-ESSER	Selects whether the effect will function as a limiter or as a de-esser. * If the Limtr Mode is DE-ESSER, the limiter settings are ignored. Conversely, if the Limtr Mode is LIMITER, the de-esser settings are ignored.
Limtr Threshold	-60–0 dB	Adjusts the level (Threshold Level) at which the limiter will begin to operate.
Limtr Release	0–127	Adjusts the time until when the limiter will turn off after the input level falls below the threshold level.
Limtr Gain	-60– +12 dB	Adjusts the gain of the sound that passes through the limiter.
DE Sens	0–127	Adjusts the sensitivity relative to the input volume, which controls how the effect is applied.
DE Frequency	1000–10000 Hz	Adjusts the frequency at which the de-esser effect will apply.

Parameter	Value	Description
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

34: Guitar Multi

Guitar Multi provides Comp/Limiter, Overdrive or Distortion, Chorus or Flanger, and Delay effects connected in series.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60–0 dB	Sets the volume level at which the compression begins.
Comp Attack	0–127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0–127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the "source sound:output sound" compression ratio.
Comp Gain	-60– +12 dB	Adjusts the output gain.
Od/Ds Sw	OFF, ON	Selects whether to use overdrive or distortion.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK, 3-STACK	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp 3-STACK: large triple stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod Xover-LPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)
Mod Level	0–127	Volume of the chorus or flanger sound.
Delay Time	0–1300 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Hi Damp Freq	500–15000 Hz, THRU	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Delay Level	0–127	Volume of the delay sound.

35: Bass Multi

Bass Multi provides Comp/Limiter, Overdrive or Distortion, 3-band equalizer, and Chorus or Flanger effects connected in series. This algorithm is a multi-effects for bass.

Parameter	Value	Description
Comp Sw	OFF, ON	Turns the comp/limiter on/off.
Comp Threshold	-60–0 dB	Sets the volume level at which the compression begins.
Comp Attack	0–127	Sets the time after the sound volume is crossed the compressor threshold until compression begins.
Comp Release	0–127	Specifies the time from when the volume drops below the compressor threshold until compression is no longer applied.
Comp Ratio	1.5:1, 2:1, 4:1, 100:1	Sets the "source sound:output sound" compression ratio.
Comp Gain	-60– +12 dB	Adjusts the output gain.
Od/Ds Sw	OFF, ON	Selects whether to use overdrive or distortion.
Drive Mode	OD, DS	Selects whether to use overdrive (OD) or distortion (DS).
Drive	0–127	Degree of distortion
Amp Sim Sw	OFF, ON	Turns the amp simulator on/off.
Amp Type	SMALL, BUILT-IN, 2-STACK (STACK)	Type of guitar amp SMALL: small amp BUILT-IN: single-unit type amp 2-STACK: large double stack amp
Distortion (DS) Level	0–127	Volume of the overdrive or distortion sound.
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod Xover-LPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)
Mod Level	0–127	Volume of the chorus or flanger sound.

36: E.Piano Multi

Enhancer, Phaser, Chorus or Flanger, and Tremolo or Autopan are connected in series. This effect is used for electric piano.

Parameter	Value	Description
Enhan Sw	OFF, ON	Turns the enhancer effect on/off.
Enhan Sens	0–127	Sensitivity of the enhancer
Enhan Frequency	0–127	Sets the lower limit of the frequencies to which the enhancement effect is added.
Enhan Mix Level	0–127	Level of the overtones generated by the enhancer
Enhan Level	0–127	Volume of the enhancer sound
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0–127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Mod Mode	CHORUS, FLANGER	Selects whether to use chorus or flanger.
Mod Rate	0.05–10.0 Hz, note	Adjusts the speed of modulation for the chorus or flanger.
Mod Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Mod Phase	0–180 deg	Sets how the chorus or flanger sound is spread.
Mod Pre Delay	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus or flanger sound is heard.
Mod Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Mod Xover-LPF	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used)
Mod Xover-HPF	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used)

Parameter	Value	Description
Mod Level	0–127	Volume of the chorus or flanger sound.
Trem/Pan Sw	OFF, ON	Turns the tremolo/auto pan effect on/off.
Trem Mode	TREMOLO, AUTO PAN	Selects whether to use tremolo or auto pan.
Trem Waveform	TRI, SAWUP, SAWDN, SQR, SIN	Selects the type of modulation. TRI: Triangle wave SAWUP/SAWDN: Sawtooth Wave SQR: Square wave SIN: Sine wave
		
Trem Rate	0.05–10.0 Hz, note	Frequency of modulation
Trem Depth	0–127	Depth of modulation

37: Keyboard Multi

A ring modulator, 3-band equalizer, pitch shifter, phaser, and delay are connected in series.

Ring Modulator is an effect which applies ring modulation using an internal oscillator to the input signal, producing bell-like sounds.

Parameter	Value	Description
Ring Freq	0–127	Frequency at which modulation will be applied
Ring Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the ring modulated sound (WET)
EQ Low Freq	50–4000 Hz	Frequency of the low range
EQ Low Gain	-15– +15 dB	Gain of the low range
EQ Mid Freq	50–20000 Hz	Frequency of the middle range
EQ Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Gain of the middle range Set a higher value for Q to narrow the range to be affected.
EQ Mid Gain	-15– +15 dB	Gain of the middle range
EQ Hi Freq	2000–20000 Hz	Frequency of the high range
EQ Hi Gain	-15– +15 dB	Gain of the high range
PS Grade	1–5	Sets the grade of the effect sound. The higher the value is set, the more natural-sounding can be obtained; however, this increases the delay from the source sound as well.
PS Coarse	-12– +12 semitone	Specifies the pitch shift amount in semitone steps.
PS Fine	-100– +100 cent	Adjusts the pitch shift amount in 2-cent steps (1 cent = 1/100 of a semitone).
PS Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Phaser Manual	0–127	Specifies the center frequency at which the sound is modulated.
Phaser Rate	0.05–10.0 Hz, note	Specifies the frequency of modulation.
Phaser Depth	0–127	Specifies the depth of modulation.
Phaser Resonance	0–127	Specifies the amount of feedback for the phaser. Higher settings will give the sound a stronger character.
Phaser Mix Level	0–127	Specifies the volume of the phase-shifted sound, relative to the direct sound.
Delay Time	0–650 ms, note	Adjusts the delay time from the direct sound until the delay sound is heard.
Delay Feedback	-98– +98 %	Adjusts the proportion of the delay sound that is fed back into the effect. Negative (-) settings will invert the phase.
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the delay sound quicker than other bands, which makes for a clearer delay effect.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first, makes the delay sound more natural.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Delay Level	0–127	Volume of the delay sound.

38: Phonograph

This effect reproduces the sound of an analog record played on a record player. This includes the various noises with the characteristic of records and the uneven rotation of older turntables.

Parameter	Value	Description
Input Mode	MONO, STEREO	Use this setting to select either a stereo or monaural record player for the effect.
Signal Dist	0–127	Degree of distortion
Frequency Range	0–127	Sets the frequency response of the record player. Lowering the value degrades the frequency characteristics, making the sound resemble that from an older system.
Disk Type	LP, EP, SP	Sets the turntable rotation speed. LP: 33 1/3 r.p.m. EP: 45 r.p.m. SP: 78 r.p.m.

Parameter	Value	Description
Total Noise	0–127	Total noise level.
Scratch	0–127	Scratches on the record.
Dust	0–127	Dust on the record.
Hiss	0–127	Continuous hissing noise. These settings add the typical record's noise. The noises increase as the values are raised. Set each of the Scratch, Dust, and Hiss noise levels to get a balance, the adjust the overall amount of noise with the Total Noise Level control.
Total Wow/ Flutter	0–127	Total wow and flutter.
Wow	0–127	Wow, long cycle rotational irregularity.
Flutter	0–127	Flutter, short cycle rotational irregularity.
Random	0–127	Random rotational irregularity. These settings determine the rotational irregularities of the record player. Set each of the Wow, Flutter, and Random levels to get a balance, the adjust the overall depth of the effect with the Total Wow/Flutter control.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

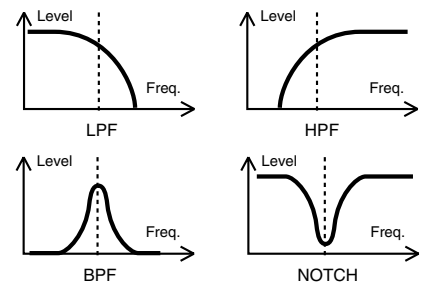
39: Radio Tuning

This effect reproduces the sound of an AM radio playing.

Parameter	Value	Description
Tuning	-50– +50	Adjusts the degree of noise that occurs when tuning a radio.
Noise Level	0–127	Sets the noise level.
Frequency Range	0–127	Sets the frequency response of the radio. Lowering the value worsens the frequency characteristics, making the sound appear to be coming from a tiny radio speaker.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)

40: Bit Rate Converter

By changing the bit count and sample rate, this effect recreates the Lo-Fi (Low-Fidelity) sounds of the early digital samplers and similar machines. After the Lo-Fi processor, a filter to change the tone is arranged in series.

Parameter	Value	Description
Pre Filter Sw	OFF, ON	This is the switch of the filter placed before the Lo-Fi processing
Sample Rate	1/1, 1/2, 1/4, 1/8, 1/16, 1/32	Sets the fraction of current sampling rates to be used for processing.
Bit Down	0–15	This setting is for reducing the bit count.
Post Filter Sw	OFF, ON	This is the switch of the filter placed after the Lo-Fi processing.
Balance	DRY100:0WET–DRY0:100WET	Volume balance between the direct sound (DRY) and the effect sound (WET)
Filter Type	Type of filter **THRU:** no filter is used **LPF:** Passes frequencies below the Cutoff. **BPF:** Passes frequencies near the Cutoff. **HPF:** Passes frequencies above the Cutoff. **NOTCH:** Passes frequencies other than those near the Cutoff.	
		
Filter Slope	-12, -24 dB/O	Filter's attenuation slope -24 dB per octave: steep -12 dB per octave: gentle
Filter Cutoff	0–127	Cutoff frequency of the filter The closer to zero it is set, the lower the cutoff frequency becomes; set it closer to 127, and the cutoff frequency becomes higher.
Filter Resonance	0–127	Resonance level of the filter Raising the setting increases resonance near the cutoff frequency, giving the sound a special characteristic.
Filter Gain	0– +24 dB	Compensates for the volume dropped in the cut frequency range with some filters. The level of compensation increases as the value is increased, and raise the volume.

41: Pseudo Stereo

Spreads the components of the monaural input sound to left and right, creating an artificial sense of stereo output.

Parameter	Value	Description
Depth	0–15	Spaciousness of the sound field

Chorus Parameters

The functions of Chorus parameters are explained.

Chorus Type

01: Chorus 1

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with less depth.

02:Chorus 2

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with less depth.

03: Chorus 3

This conventional chorus effect adds spaciousness and depth to the sound. Slow modulation frequency with more depth.

04: Chorus 4

This conventional chorus effect adds spaciousness and depth to the sound. Rapid modulation frequency with more depth.

05: Feedback Chorus

This chorus offers a flanger-like effect, creating a soft sound.

06: Flanger

This effect sounds somewhat like a jet airplane taking off and landing.

07: Short Delay

This is a delay with a short delay time.

08: Fbk Short Delay

This is a short delay with many repeats.

Chorus Parameters

Parameter	Value	Description
Pre Low Freq	500–15000 Hz, THRU	Frequency of the low range (THRU: no filter is used)
Pre Hi Freq	THRU, 50–800 Hz	Frequency of the high range (THRU: no filter is used)
Pre Dly Time	0–50.0 ms	Adjusts the delay time from the direct sound until the chorus sound is heard.
Co LPF Freq	500–15000 Hz, THRU	Adjusts the cutoff frequency of the low pass filter. (THRU: no filter is used) The effect will be applied to the frequency range below the cutoff frequency.
Co HPF Freq	THRU, 50–800 Hz	Adjusts the cutoff frequency of the high pass filter. (THRU: no filter is used) The effect will be applied to the frequency range above the cutoff frequency.
Rate	0.05–10.0 Hz, note	Sets the cycle for the chorus or flanger sound undulations.
Depth	0–127	Adjusts the depth of modulation for the chorus or flanger.
Feedback	-98– +98 %	Adjusts the proportion of the effect sound that is fed back into the effect. Negative (-) settings will invert the phase.
Cho/Flg Sw	CHORUS, FLANGER	Selects either chorus or flanger.

Reverb Parameters

The functions of Reverb parameters are explained.

Explanations for each Reverb Type are given on the following pages.

01: Stereo Plate

Stereo reverb which simulates plate reverberation (a reverb unit that uses the vibration of a metallic plate).

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

02: Stereo OperaHouse

Stereo reverb which simulates the reverberation within a opera house.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

03: Stereo StudioSpring

Stereo reverb which simulates spring reverberation (a reverb unit that uses the vibration of springs).

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

04: Stereo Echoes

Stereo reverb which simulates echoes.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–500 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Repeat Time	20–500 ms	Repeat interval
Rev Time	0.06–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

05: Stereo Room

Stereo reverb which simulates the reverberation within a room.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	0.40–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

06: Stereo Cathedral

Stereo reverb which simulates the reverberation within a cathedral.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	0.40–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

07: Stereo Church

Stereo reverb which simulates the reverberation within a church.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Pre Delay	0–160.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Room Size	0–5	Size of the room which is simulated
Rev Time	1.00–10.00 sec	Duration (time) of the reverb
LfDamp Gain	-36–0 dB	Degree of Low Damp The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
HfDamp Gain	-36–0 dB	Degree of High Damp High Damp, by attenuating the higher frequencies first.

08: Room 1

Reverb which simulates the reverberation within a room. It is standard room reverb.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Low Rev Time	0.06–32.0 sec	Duration (time) of the reverb for the low frequency band
Hi Rev Time	0.06–32.0 sec	Duration (time) of the reverb for the high frequency band
Xover Freq	160–15000 Hz, THRU	The reverberation specified by the Low Rev Time will be applied to the range below this frequency, and by the Hi Rev Time to the range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

09: Room 2

This simulates the reverberation of a room. It is suitable for simulating a fairly small room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–10	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

10: Room 3

Reverb which simulates the reverberation within a room. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

11: Hall 1

This simulates the reverberation of a concert hall. It is a conventional hall reverb. You can also apply a chorus effect to the reverberation to adjust the sense of spaciousness or to create a special effect.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Low Rev Time	0.06–64.0 sec	Duration (time) of the reverb for the low frequency band.
Hi Rev Time	0.06–64.0 sec	Duration (time) of the reverb for the high frequency band
Xover Freq	160–15000 Hz, THRU	The reverberation specified by the Low Rev Time will be applied to the range below this frequency, and by the Hi Rev Time to the range above this frequency.
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	5.6–32.6 m	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)
Chorus Rate	0–127	Rate of modulation for the reverb
Chorus Depth	0–127	Depth of modulation for the reverb

12: Hall 2

Simulates the reverberation in a concert hall. This is suitable for simulating a smaller room, and produces a clear reverberation.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–64.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–10	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

13: Hall 3

Simulates the reverberation in a concert hall. This is suitable for simulating a fairly large room, and produces reverberation with a strong mid and low range.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–64.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

14: Garage

This simulates the reverberation of a garage. It produces the reverberation of a room surrounded by hard-surfaced walls with many reflections.

Parameter	Value	Description
Pre Low Freq	50–4000 Hz	Frequency of the low range
Pre Low Gain	-15– +15 dB	Gain of the low range
Pre Mid Freq	50–20000 Hz	Frequency of the middle range
Pre Mid Q	0.5, 0.7, 1.0, 2.0, 4.0, 8.0	Width of the middle range Set a higher value for Q to narrow the range to be affected.
Pre Mid Gain	-15– +15 dB	Gain of the middle range
Pre Hi Freq	2000–20000 Hz	Frequency of the high range
Pre Hi Gain	-15– +15 dB	Gain of the high range
Rev Time	0.06–32.0 sec	Duration (time) of the reverb
Pre Dly Time	0–200.0 ms	Adjusts the delay time from the direct sound until the reverb sound is heard.
Density	0–99	Density of the reverb
Room Size	1–8	Size of the room which is simulated
Early Ref Level	0–99	Volume level of the initial reflected sound
Release Density	0–99	Density of the sound that reaches the listener after many repeated reflections
Low Damp Freq	50–4000 Hz	Adjusts the frequency below which sound fed back to the effect will be cut. The Low Damp function damps the low frequency band of the reverb sound quicker than other bands.
Low Damp Gain	-36–0 dB	Degree of Low Damp
Hi Damp Freq	2000–20000 Hz	Adjusts the frequency above which sound fed back to the effect will be cut. High Damp, by attenuating the higher frequencies first.
Hi Damp Gain	-36–0 dB	Degree of High Damp
Post HC Freq	160–15000 Hz, THRU	Frequency at which the high cut filter will begin to take effect (THRU: no filter is used)

Specifications

VC-2: V-Card Vocal Designer

Main Functions

- Transform vocal input from a mic into high-quality choirs and human choruses
- Use the keyboard to play chords and control the pitch in real time
- Transform the character of your voice in real time
- Play high-quality vocal choirs from your keyboard

Algorithm

- Modeling Choir
- Modeling Vocal
- Modeling Analog Voice
- Vocoder Choir
- Vocoder Solo
- Vocoder Vintage
- Polyphonic Pitch Shifter
- Keyboard Choir
- Keyboard Vocal
- Keyboard Analog Voice
- Processor Type 1
- Processor Type 2

Effects

- MFX (Multi-effects): 41 sets
- Chorus: 8 sets
- Reverb: 14 sets

Assisted performance functions

- Auto Note Switch (usable without playing the keyboard)
- Multi-Chord Memory Function

Internal (User) Memory

- Patches: 448

Preset Memory

- Patches: 64

Supported hardware configurations

A mic for input, an external MIDI keyboard, etc.

* *In the interest of product improvement, the specifications and/or appearance of this unit are subject to change without prior notice.*

[Vocal Designer]
Model VC-2 for V-Synth XT

MIDI Implementation Chart

Date: March 1, 2005
Version: 1.00

Function...		Transmitted	Recognized	Remarks
Basic Channel	Default	X	1-16	
	Changed	X	1-16	Memorized
Mode	Default	X	Mode 3	
	Messages	X	Mode 3, 4 (M=1)	*2
	Altered	**********		
Note Number		X	0-127	
	: True Voice	**********	0-127	
Velocity	Note ON	O	O *4	
	Note OFF	O	O *4	
Aftertouch	Key's	X	O *1	
	Channel's	O	O *1	
Pitch Bend		X	O	
Control Change	0, 32	O *1	O *1	Bank select
	1–31, 33–95	O *1	X *1	
	100, 101	X *1	O	RPN LSB, MSB
Program Change		O *1	O *1	
	: True Number	**********	0-127	Program Number 1-128
System Exclusive		O *3	O *1	
System Common	: Song Postion	X	X	
	: Song Select	X	X	
	: Tune	X	X	
System Realtime	: Clock	X *1	X *1	
	: Command	X	X	
Aux Messages	: All Sound Off	X	O	
	: Reset All Controllers	X	O	
	: Local ON/OFF	X	X	
	: All Notes Off	X	O (123-127) *4	
	: Active Sensing	O *1	O	
	: System Reset	X	X	
Notes		* 1 O X is selectable. * 2 Recognized as M=1 even if M≠1. * 3 Transmitted on excuted Data Transfer or receiving RQ1. * 4 ignored when Algorith is Processor Type1 or Processor Type2		

Mode 1 : OMNI ON, POLY
Mode 2 : OMNI ON, MONO
Mode 3 : OMNI OFF, POLY
Mode 4 : OMNI OFF, MONO

O : Yes
X : No

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